The Audio*manager* series

Utility Patent Documents

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The Audio*manager* series

The growing market of non-linear video editing suites and audio production studios presents unique and dynamic requirements for signal routing. Multiple signal routing configurations are needed to accomplish the various tasks required of these systems. Increasingly, a number of different program formats must be accommodated, as well.

Traditionally, an audio mixing console is utilized in these systems for part of the audio routing, but they are not specifically designed for the task, and the system operator is rarely adept in navigating its topology. Relying on these mixing consoles for routing and monitoring functions often results in feedback loops, improper level settings, and the frequent need for re-patching system components.

With the addition of available switchers, the need for manual repatching is eliminated, but their control panels often prove as cumbersome as the mixing consoles' for the system operator.

The Audio*manager* is an audio router-mixer/system controller that provides a simplified means of creating an integrated system for meeting the audio routing, mixing, interfacing, level control, processing, format conversion, monitoring and metering requirements; and the video and data signal routing needs for video editing systems and audio production studios. Its unique software and specialized remote control panel allow intuitive operation, where pressing one or two buttons is all that is required to configure the signal routing of the entire editing system for the various editing tasks. The Audio*manager* provides the operator with default monitoring and metering selections, and easy to interpret visual verification, without causing improper routing configurations or destructive feedback loops.

With it's integrated fader panel, it's possible to control digitizing and layback levels, or create monitor mixes, and, alternately interface with and become a control surface for the digital editors virtual mixer.

The Audio*manager* software can be accessed and modified via modem, internet, or personal computer connection, thus enabling the Audio*manager*, as a control platform, to control, configure and interface with an array of devices used in the editing process.

The Audio*manager* can be provided without matrices (it can interface with external routers), or it could be provided with some combination of matrices for audio, video and data. As a control platform the Audio*manager* is independent of program format.

For hybrid systems, complimentary routers can be used in conjunction with the Audio*manager* to provide additional router levels so that various signal formats can be simultaneously routed between compatible components in the system.

The Audio*manager* series

Features and Benefits

- Eliminates the need for repatching, routing audio as required for the entire editing process.
- Eliminates the need for a mixer and the required number of mixer input channels.
- Eliminates all feedback loops.
- Permits a number of tasks to be accomplished at the same time. You may edit or digitize, while dubbing, and listen to another source device.
- Can control external routers for video and data, and alternate format audio for analog/digital hybrid systems.
- Phase warning meters and software assisted polarity inversion.
- Provides 1khz tone and can provide command for color bars and video black.
- Provides convenient, comprehensive monitoring and metering facilities with independent source and channel selection, level control, and automated muting functions.
- Provides programmable F keys for custom routing and other functions.
- Integration with workstation protocols and servers is also possible.
- Compared with a conventional routers control panel, the Audio*manager* is quicker to learn, faster to use, with system routing status easier to verify. The desktop control panel is compact, intuitive and helps prevent inadvertent commands.

EMBODIMENTS

Audio*manager* 102, 104, D102 and D104 Standard Interface w/Fader Panel

The Standard Interfaces are designed to interface with 2 in/4 out and 4 in/4, and 8in/8out, digital or analog out editing systems.

Motor Control Faders can be omitted from the Fader Panel sacrificing the editor's virtual mixer interface.

The Fader Panel can be omitted for use with an external mixer.

ALTERNATE EMBODIMENTS:

Audio*manager* MXL Mixer-less Interface

These units are designed for applications where a mixing console is not used or desired. The MXL units are similar to the Standard Interface, except that neither unit has connections for a mixing console. Faders control panel are used to adjust the sources input level.

Audio*manager* ERI Existing Router Interface

For interfacing with existing router systems, the ERI provides control and monitoring capabilities.

OPTIONS

Audio*manager* VBA

The model VBA is a video breakaway control panel. When a video router is integrated with the Audiomanager, the VBA permits video monitoring selections other than the default.

Audio*manager* DS

The model DS, consisting of a PCI card and a remote monitor control panel will interface with any of the Audiomanager models to provide on screen control of all routing functions.

OTHER EMBODIMENTS

Audio*manager* VO

Configured to provide monitor feeds to the booth and ISDN lines Voice-Over studios.

Audio*manager* MP (Music Production Studio)

Configured to accommodate eight or more channels for the editor and at least one deck. Additional routing configurations for multi-track production work

Audio*manager* Foley

For Foley stage work

Audio*manager* ADR

For ADR work

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Provisional Patent Application

Title of Invention: The audio*manager*

Problem solved by this invention:

When editing video and/or audio program with non-linear editing systems, one must often audition and import audio from a variety of sources external to the editor: Beta and 3/4" video tape, compact disc, digital audio tape, microphones, etc. Once the editing is completed, it often needs to be exported from the editing systems. An additional requirement is when copies of tapes need to be made between two (or more) of the external decks.

Traditionally, a standard audio mixing console is utilized to select and route these various signals. Due to the relative complexities of these consoles, the fact that they are not specifically designed for the task, and that the system operator is rarely adept in navigating its topology, feedback loops (potentially destructive to monitor loudspeakers, at worst, and annoying, at least), improper signal level settings, and frequent need for repatching the various connectors, are among the awkward and time consuming result.

When standard matrix switchers are employed, the need for manual repatching may be eliminated, but their control panels, like those of the mixing consoles, often prove cumbersome for the system operator with all of the attendant difficulties experienced when using only a console. Neither approach gives the operator a convenient way to configure the system patching, verify the routing, or properly monitor the program.

The audio*manager* is a series of audio router/system controllers which provide a simplified means of meeting the audio interfacing requirements of video editing systems and controlling external video and data routers. Its unique software and its specialized remote control panel allow for intuitive operation where pressing one or two buttons is all that is required to configure the system patching for the various editing tasks.

The audio*manager* also enables the editing system to perform more than one function at a time. It's possible to simultaneously dub one program, digitize or edit another, and listen to a third source.

Description of Invention:

The audio*manager* consists of a standard 19" rack mountable chassis to which all audio signal paths are connected and, via unique software control, routed to all of the editing system components. Level matching for semi-professional equipment is provided as is a microphone pre-amp. Signal switching and routing can be accomplished in a number of ways, including: matrix or matrices or discreet switching. A wired remote control panel allows the system operator to choose specific operating modes related to the editing process, select the various audio sources, and independently select and control the volume level of signals to the monitor loudspeakers.

The STANDARD remote control panel has four main groupings of controls that operate the device. The specific functions and actions of these controls are detailed in the sections: Commands, Flows, Routing/Switching. A general description follows.

The first group is the MODE selectors. These are named after the tasks that an operator may need to carry out. Selecting any of the modes creates a set of default conditions where the signal routing is configured, other modes may be automatically reset and/or locked out, monitoring source is selected and protective loudspeaker muting is activated as necessary. There are also "F Keys" which can be used for programmable The customized routing and control schemes.

The second group is the SOURCE Selectors. Each has two colored LED's to indicate activation a relative to the Mode(s).

Third is a, largely, complimentary row of selectors for Monitoring Source. These are generally established by the defaults that can be over-ridden.

The fourth group, related to the third, is for Monitor control, including: level, mono trimming, program select, muting selectors and indicators, and metering of inter-channel phase relationships.

The MXL remote control panel is similar to the STANDARD control panel with the following exceptions:

a. There are faders for adjusting the input source level.

b. When the audio*manager* is in the edit MODE, the "Editor +Source" selector permits the simultaneous monitoring of the editor and the selected source.

c. The "Layback via Mixer" mode is eliminated.

d. "Digitize via Faders" replaces "Digitize via Mixer

The audio*manager* series includes, at least, eight different versions. Two units interface with two and four channel analog systems. Another two interface with two and four channel digital systems. These four can be used with or without the use of a mixing console. Two more units interface with two and four channel analog systems where a mixing console is not needed or desired. Faders and meters on the control panels are provided for adjusting the source input level.

The remaining two units are for using the audio*manager*s control panel, and it's monitoring facilities, with editing systems that are connected to existing analog or digital routers. An optional unit, consisting of a PCI card and a remote monitor control panel will interface with any of the audio*manager* models to provide on (the editing work-

station) screen control most of its switching functions. Another model provides for video monitoring "breakaway."

Using any of the analog audio*managers* mainframes and an external digital router, editing systems that are analog/digital hybrids can be accommodated.

In addition, it is possible, via an RS-232/422 control port, for the audio*manager* to control properly configured video and data routers and servers.

Features and Benefits

- Eliminates the need for repatching, routing audio as required for the entire editing process.
- Eliminates all feed-back loops.
- Provides convenient, comprehensive monitoring and metering facilities with independent source and channel selection, muting functions and level control.
- Permits a number of tasks to be accomplished at the same time. You may edit or digitize, while dubbing, and listen to another source device.
- Reduces the complexity and the number of "button pushes" to re-configure signal routing.
- Reduces the required number of mixer input channels and can even eliminate the need for a mixer where one is not desired.
- Provides 1khz tone and can provide command for color bars and video black.
- Provides a front and rear panel microphone input.
- Provides level matching for semi-professional equipment.
- Provides programmable F keys for custom routing and other functions.
- Can control external routers for video and data, and alternate format audio for analog/digital hybrid systems.
- Integration with workstation protocols and servers is also possible.
- Compared with a conventional routers control panel, the audio*manager* is quicker to learn, faster to use, with system routing status easier to verify. The desktop control panel is compact, intuitive and helps prevent inadvertent commands.

EMBODIMENTS

Possible configurations include models for editing system interfaces that are analog and/or digital, mixer-less, or have an existing router. Representative embodiments include:

audio*manager* (D)102 and (D)104 Standard Interface

The (D)102 and (D)104 are designed to interface with 2 in/ 4 out and 4 in/4 out editing systems, respectively.

audio*manager* MXL 4 Mixer-less Interface

This unit is designed for applications where a mixing console is not used or desired. The MXL 4 is similar to the 104, except that it has no connections for a mixing console. Four faders on the control panel are used to adjust the selected source input level.

audio*manager* ERI (D)4 Existing Router Interface

Providing control and monitoring capabilities, the ERI(D)4 is designed to interface with existing router systems.

Options

audio*manager* DS

The model DS, consisting of a PCI card and a remote monitor control panel will interface with any of the audio*manager* models to provide on screen control of routing functions.

audio*manager* VBA

The model VBA is a video breakaway control panel. When a video router is integrated with the audio*manager*, the VBA permits video monitoring selections other than the default.

MODIFIED EMBODIMENTS

audio*manager* B Series

A semi-professional version with an unbalanced/-10db I/O and a limited number of input sources and program channels.

audio*manager* Mixed Format

Customizable card-cage mainframe type with a variety of cards for accommodating different formats.

audio*manager* (D)108

As the (D)104 with additional channels for eight channel systems.

OTHER EMBODIMENTS

audio*manager* VO

Configured to provide monitor feeds to the booth and ISDN lines Voice-Over studios.

audio*manager* MP (Music Production Studio)

Configured to accommodate eight or more channels for the editor and at least one deck. Additional routing configurations for multi-track production work.

audio*manager* IM

With integrated mixer and noise reduction.

audio*manager* Linear

For on line editing

audio*manager* Foley

For Foley stage work

audio*manager* ADR

For Automatic Diologue Replacement work

audio*manager* 8 X 8 Dub Panel

For selecting source, destination and monitor.

DEFINITIONS

CONTROLS

MODE

These are named after routine tasks that an editor may need to carry out. There are also "F Keys" which can be used for customized routing and control schemes. Selecting any of the modes creates a set of default conditions where:

a. all signal routing is configured
b. other modes and functions may be reset and/or locked out
c. the MONITOR SOURCE is selected.

Digitize Mixer Bypass — The selected SOURCE is routed directly to the Editor Record Out connectors.

Digitize Via Mixer — The selected SOURCE is routed to the FP4 Source faders, or to an external mixer, via the Audio*manager*'s Source Out connectors. The returned signal is routed to the Editor Record Out connectors.

Edit — The editors output is routed to the FP4 Editor faders, or to an external mixer, via the Audio*manager*'s Editor PGM Out connectors. The returned signal is routed to the monitor buss.

Audition- While in the edit mode any selected source is routed to the FP4 Source faders, or to an external mixer, via the Audio*manager*'s Source Out connectors. This enables the simultaneous monitoring of the editor and source programs.

Layback Mixer Bypass — The editors output is routed directly to all Record Outputs, except those to the editor.

Layback Via Mixer — The editors output is routed to the FP4 Editor faders, or to an external mixer, via the Audio*manager*'s Editor PGM Out connectors. The returned signal is routed to all Record Outputs, except those to the editor.

Dub — When in the Dub mode, any selected SOURCE is routed to all the Record Outputs, except those to the Editor and the selected source.

SOURCE — Any device connected to the Audio*manager*'s Source Inputs connectors. These selectors choose the desired input source for Digitizing, auditioning while Editing, and Dubbing. Each has a pair of colored LED's. One is lit for either the Digitize or Edit mode, the other is lit for the Dub mode.

MONITOR SOURCE — Program that's routed to the monitor speakers. Depending on the Mode selected a MONITOR SOURCE default is automatically chosen. In addition, any MONITOR SOURCE can be manually selected at any time.

MONITOR CONTROL — These controls adjust the monitor volume and mono trim levels, program channel selection, and mute and dim selection. Phase warning indicators and Phase Reverse switches are also provided.

The Audio*manager*

CONNECTORS

Source Out

While in the DIGITIZE or EDIT mode the selected SOURCE is routed to the Source Out connectors which are connected to two or four of the FP4 Source faders, or to an external the mixing console.

When the Audio*manager* is placed in the DUB mode the next selected SOURCE is routed only to the Record Outputs. The previously selected SOURCE remains routed to the Source Out connectors.

Record Output

The Audio*manager*'s output to the other system devices.

Editor PGM Out

The editors outputs are connected to the Editor In on the Audio*manager*. These in turn are routed directly to the Editor PGM Out which is routed to the FP4 Editor faders, or to an external mixing console, whenever the Audiomanager is placed in the Edit or Layback modes.

PGM In

PGM In is the returned signal from the FP4 or an external mixing console.

GENERAL

FP4

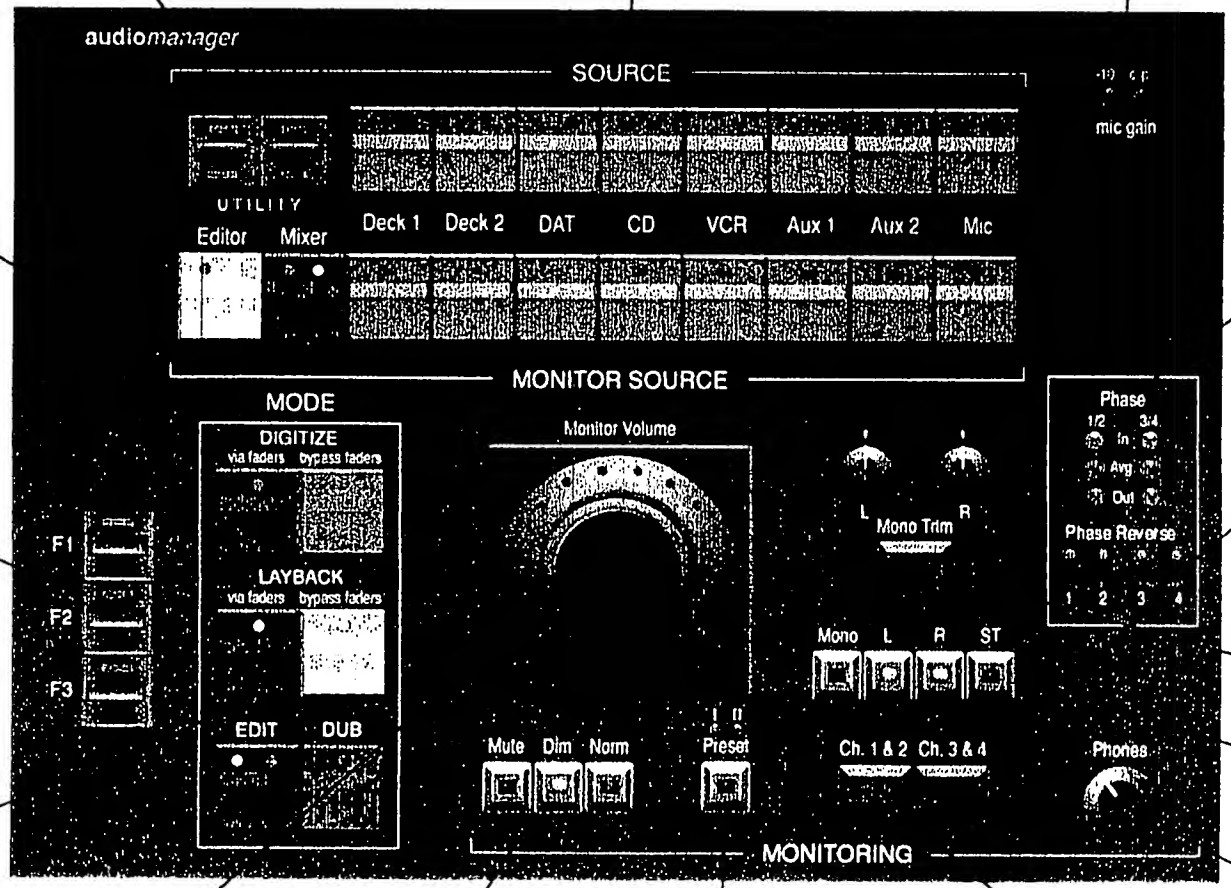
Mixer designed specifically for use with the Audio*manager*.

UTILITY BUTTONS
Selects video black, bars and tone. (Black and bars require video generators and video router)

SOURCE
Chooses the input source for Digitizing, auditioning while Editing and Dubbing. The green LED represents the Digitize or Edit modes, the red is for Dub mode.

MIC GAIN METER
-10db and clip indicators for trimming the mic pre-amp gain

MONITOR SOURCE
Allows the user to monitor any source, anytime, including the editor or mixer. (When a given MODE is selected, a MONITOR SOURCE default is automatically chosen, which can always be overriden.)



PHASE METER
Alerts user if either channel pair has out of phase content.

PHASE REVERSE
Reverses phase of the selected channel of either the "Source" or "Editor" program channels.

FUNCTION KEYS
User programmable keys for special functions, configurations and preferences.

MONO TRIM
When MONO is selected MONO TRIM enables the rotary faders to be used for creating a mono monitor mix.

MODE BUTTONS
Selecting any of the MODES creates a set of default conditions where: A) signal routing is configured B) other MODES may be reset and/or locked out C) the MONITORING AND METERING SOURCE is selected.

MONITOR
Selectively monitor in Mono, Stereo, Left only or Right only.

MONITOR VOLUME
Knob to adjust the volume for monitoring, plus LED's to indicate relative level.

VOLUME LEVEL SELECT
Mute, Dim or restore Normal monitoring levels.

PRESET
Defaults monitor volume to user adjustable "preset" levels.

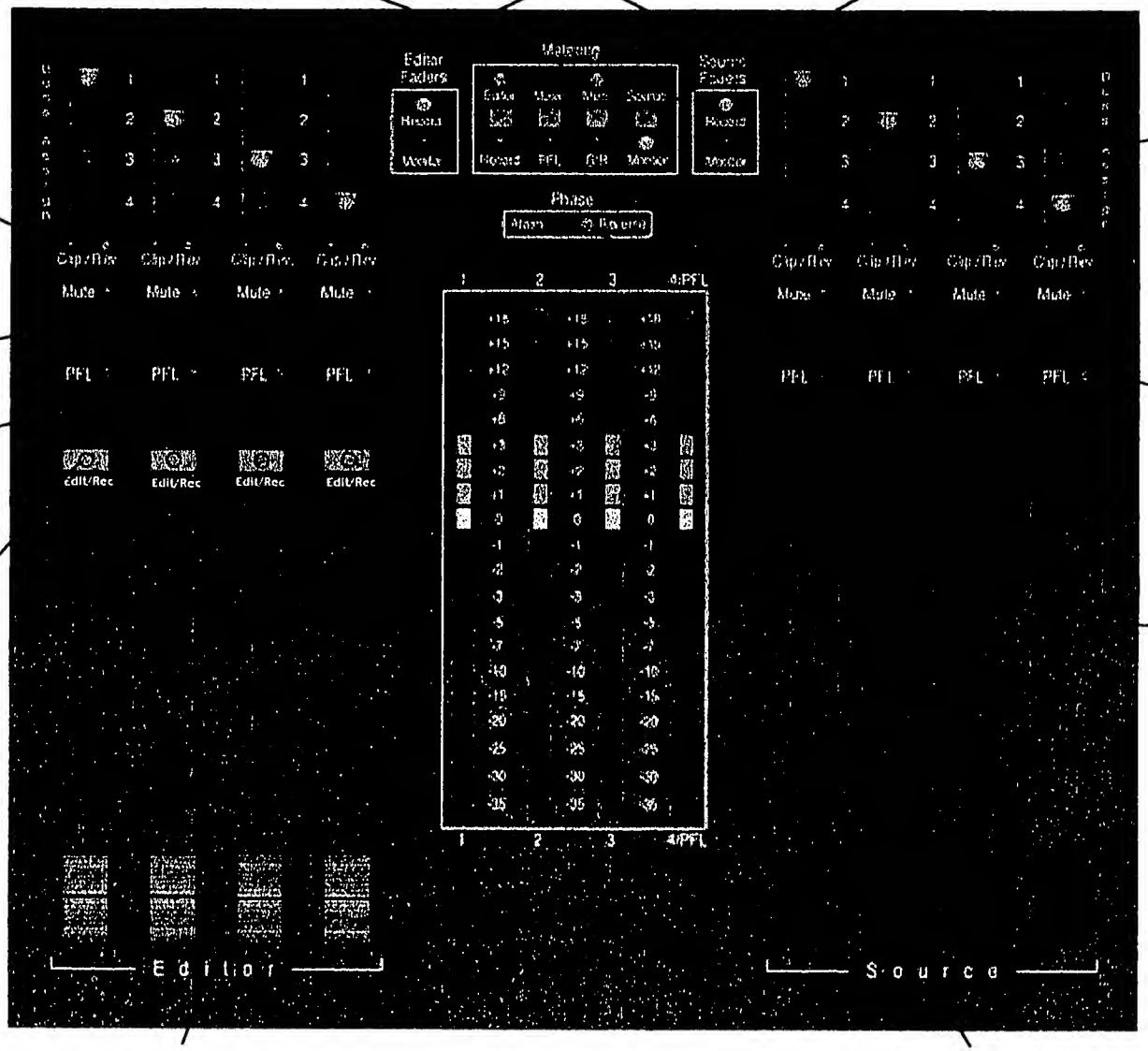
CHANNEL MONITOR
Selects monitoring for Channels 1&2 or 3&4..

PHONES
Headphone volume adjustment.

METER INDICATORS (VU & PHASE)
Indicates what the meter source is reading at any given time.

EDITOR FADER /SOURCE FADER INDICATORS
Based on the MODE selection, indicates whether the faders are affecting recording or monitoring levels.

METERING OVERRIDE BUTTONS
Allows user to override default settings and meter any signal path, anytime.



CLIP/REV.
Alerts user if a channel is clipping, or if its phase has been reversed.

MUTE
Mutes the channel.

PFL
Pre-Fade Listen allows one to monitor (solo) a channel input .

EDIT/REC
Fader Panel controls are interfaced with the editor, replicating the editor's internal virtual mixer controls and uses the motorized faders for level control/representation of its internal tracks.

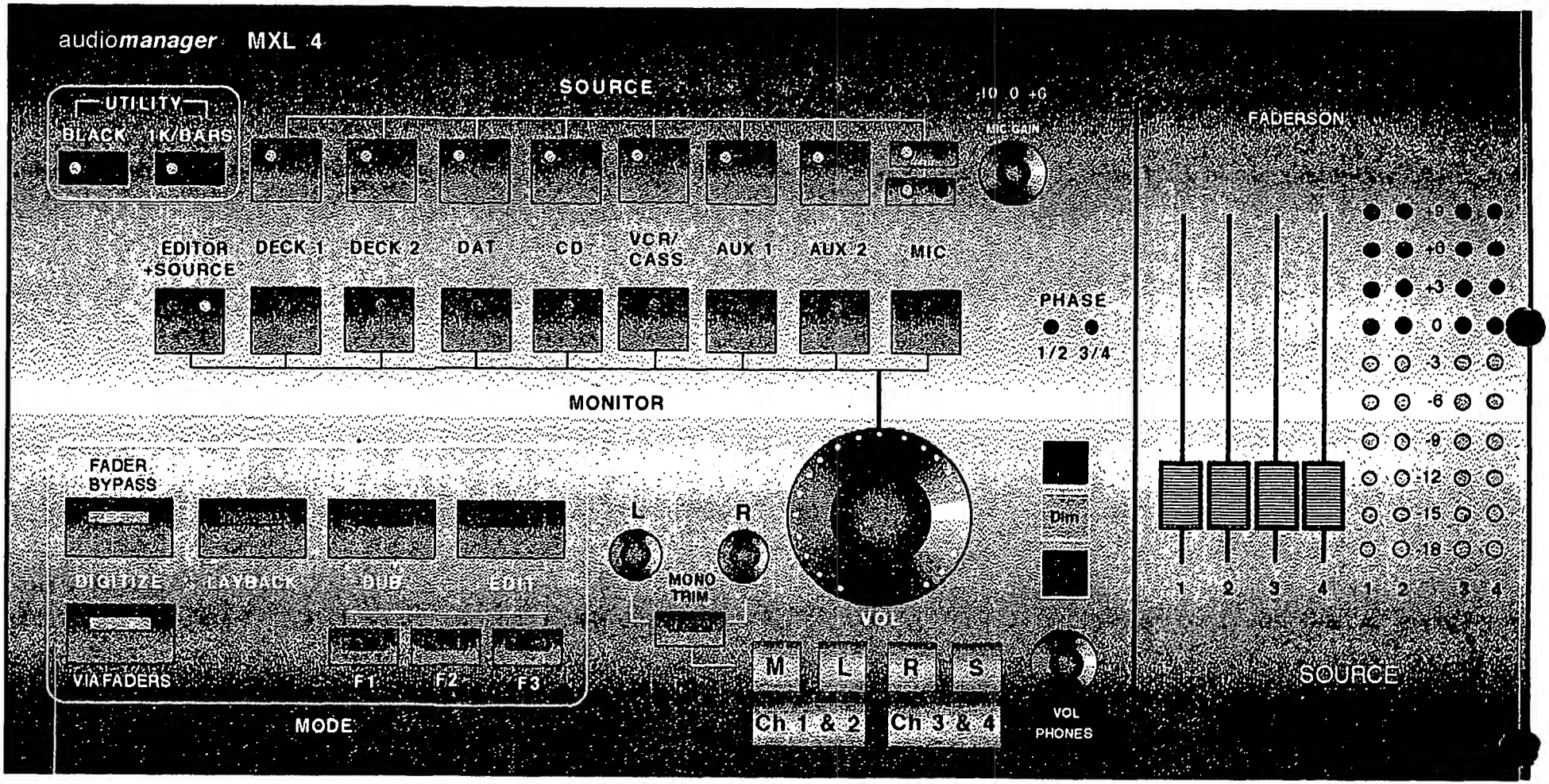
BUSS ASSIGN
Assigns the channel to one or more of the 4 outputs. Interchangable green lights indicate defaults.

MASTER PHASE REVERSE INDICATION
Alerts user if any phase reverse switches are engaged

VU METER
4 channel VU meter. Channel four indicates metering for PFL.

EDITOR FADERS
Controls output levels from the edit system. Also, when one chooses to "bypass" the faders, they can be used to create a "monitor mix."

SOURCE FADERS
Unique "Singlesource™" configuration allows all input sources to be controlled by the same 4 faders. Also, when one chooses to "bypass" the faders, they can be used to create a "monitor mix."



MXL Control Panel

The MXL remote control panel is similar to the Standard panel with the following exceptions:

a. There are faders for adjusting the input source level only.

b. When the Audiomanager is in the edit MODE, the "Editor+Source" selector permits the simultaneous monitoring of the editor and the selected source.

c. The "Layback via Faders" mode is elimintated.

The Audiomanager				
MXL 4 Control Panel				
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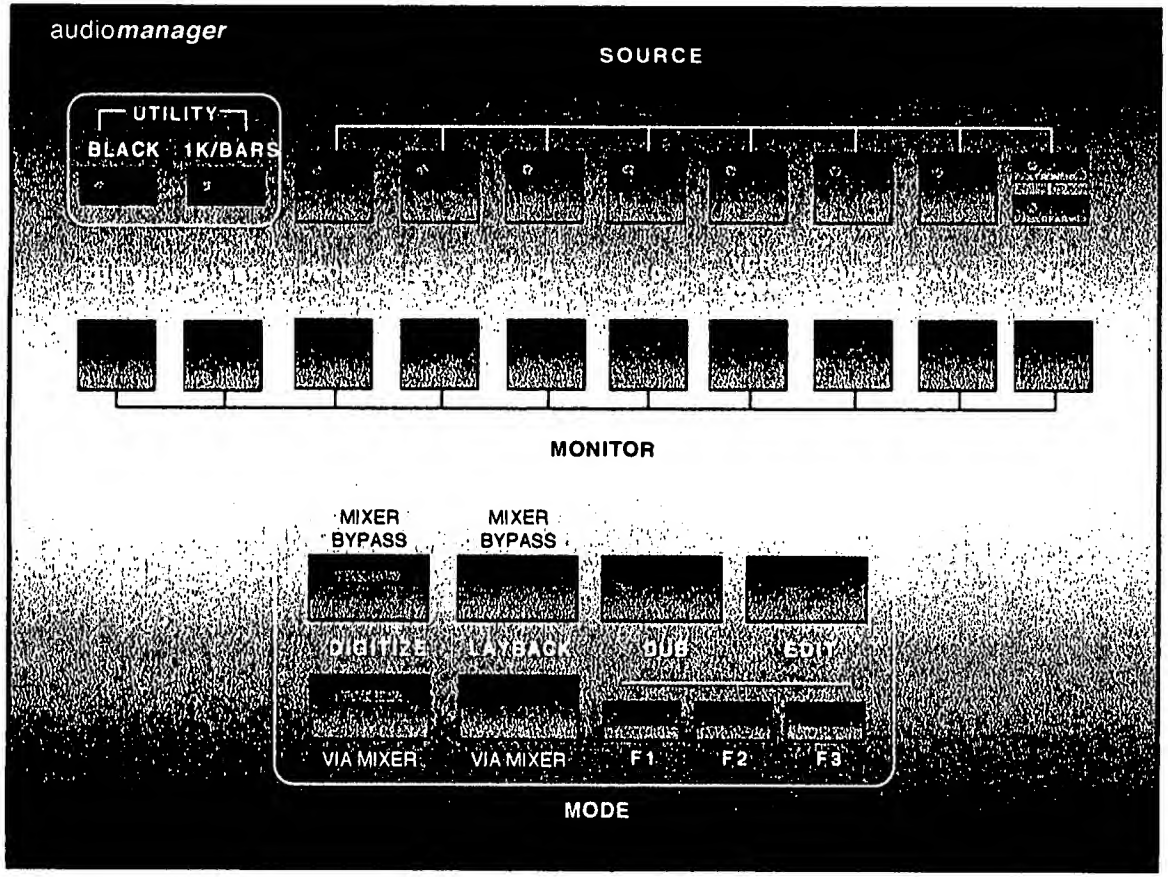
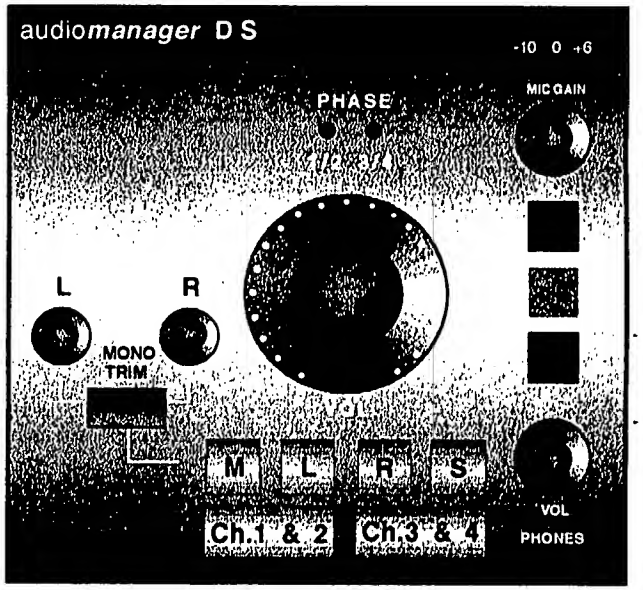


Screen Display



Remote Panel

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The Audiomanager				
DS Screen Display/Remote Panel				
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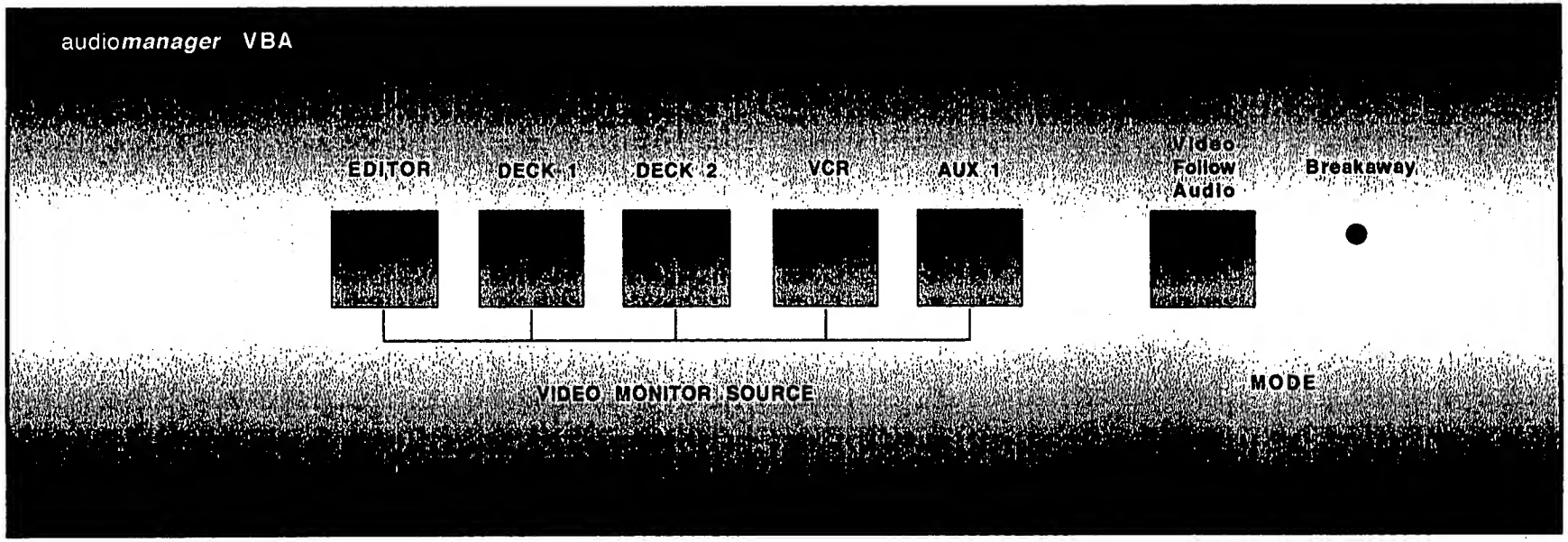

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The Audio*manager*				
VBA Video Breakaway Panel				
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S = Switch
L = LED
P = Volume Control

audio*manager*

Source

Black | Bars/ Tone

L8 S4 L9 | L10 S5 L11

Utility

S6 S7 S8 S9 S10 S11 S12 S13

Editor | Mixer | Deck 1 | Deck 2 | DAT | CD | VCR/ CASS | Aux 1 | Aux 2 | Mic

S14 S15 S16 S17 S18 S19 S20 S21 S22 S23

Monitor Source

-10 Clip

Mic. Gain

Mode

Digitize

Via Faders | Fader Bypass

S24 S25

Layback

Via Faders | Fader Bypass

S26 S27

Edit | Dub

S28 S29

F1 S1

F2 S2

F3 S3

Monitor Volume

P1 L | P2 R

Mono Trim

S32

Mono | L | R | ST

S33 S34 S35 S36

Ch. 1 & 2 | Ch. 3 & 4

S30 S31

Phase

1/2 | 3/4

In

Avg

Out

1 2 3 4

Phase Reverse

P3

Phones

Mute | Dim | Norm

S37 S38 S39

Preset

S40

Monitoring

The Audio*manager*

Patent Control Panel Legend

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Approved By: Eddie Ajamian

DATE 9/28/99

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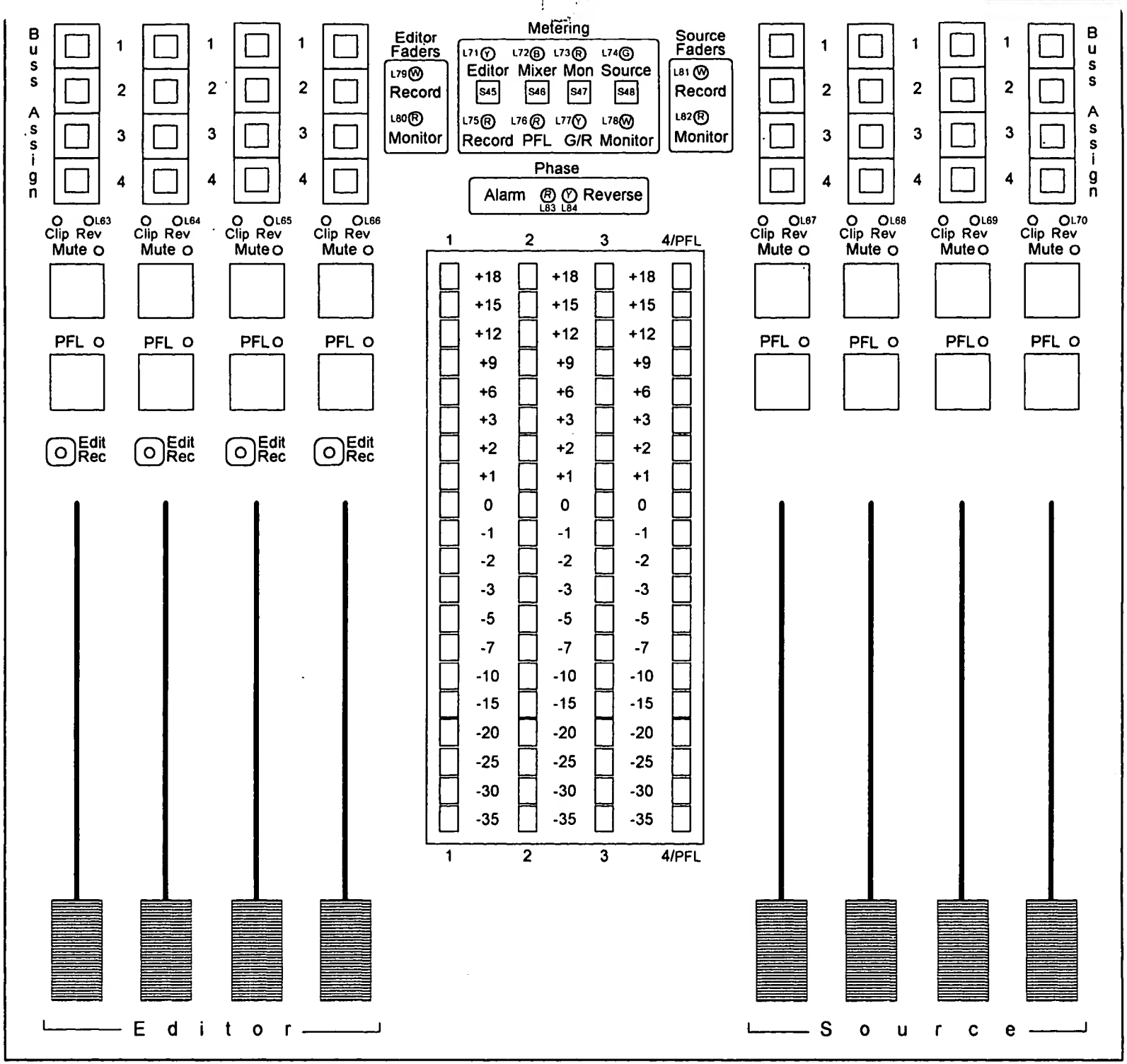

The Audiomanager			
Patent Fader Panel Legend			
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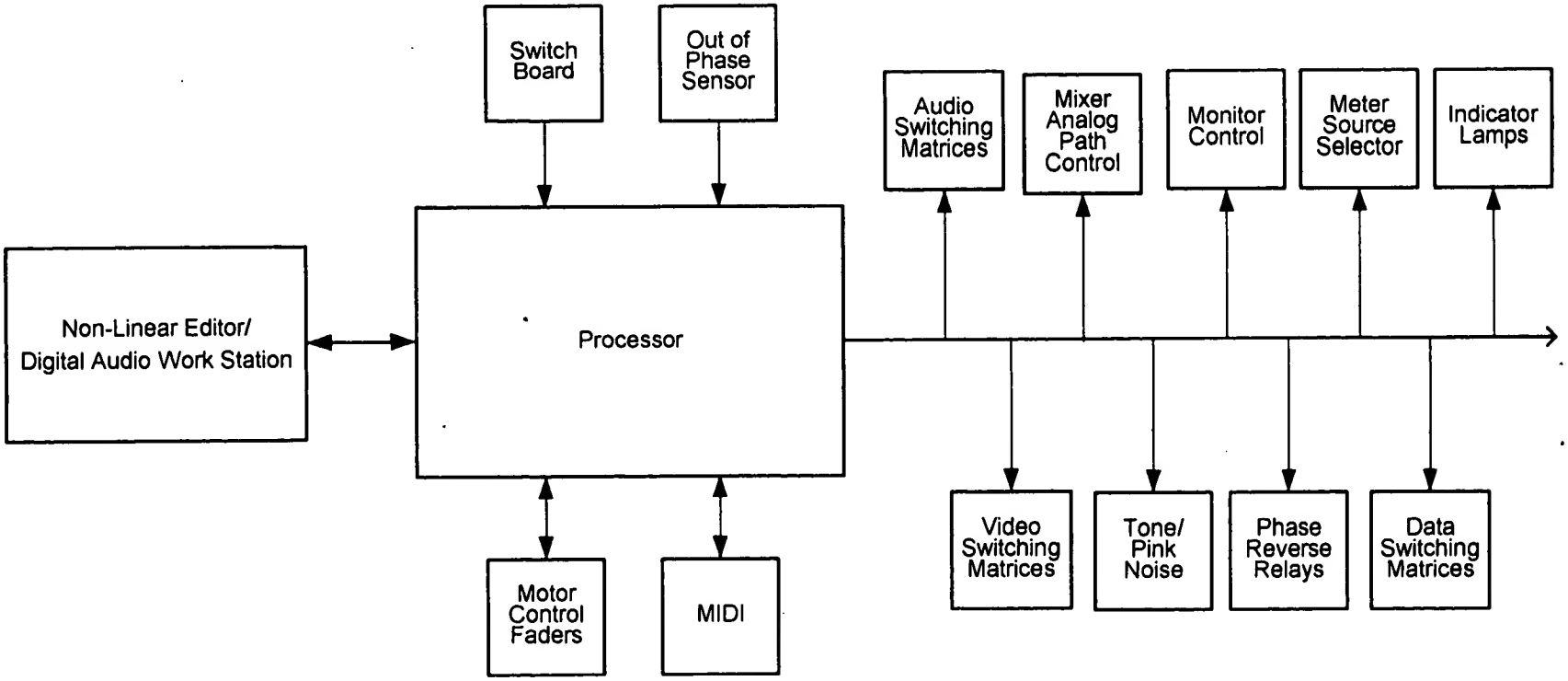

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CONFIDENTIAL

The Audio*manager*				
Patent Control System Block Diagram				
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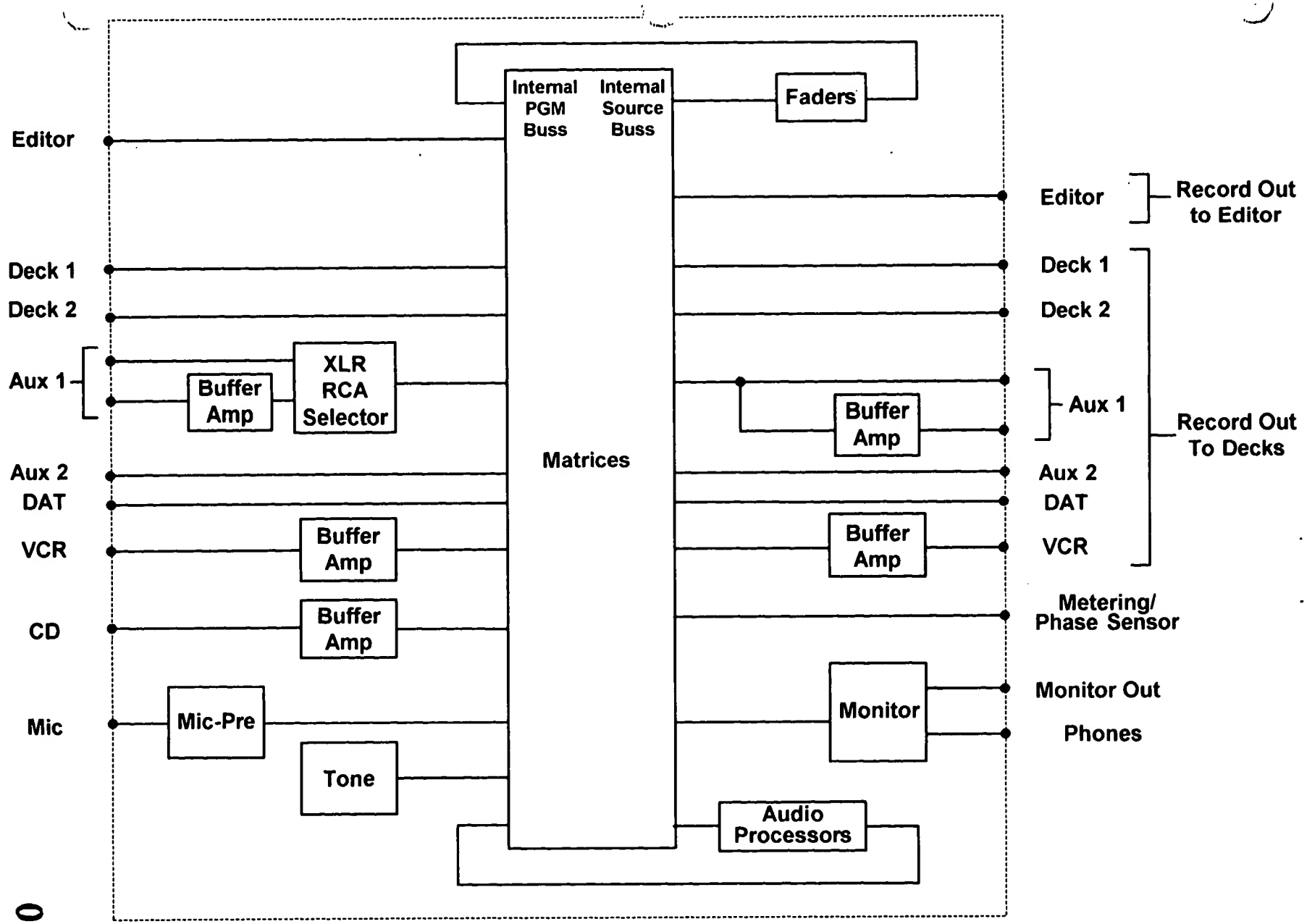

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The Audio*manager*				
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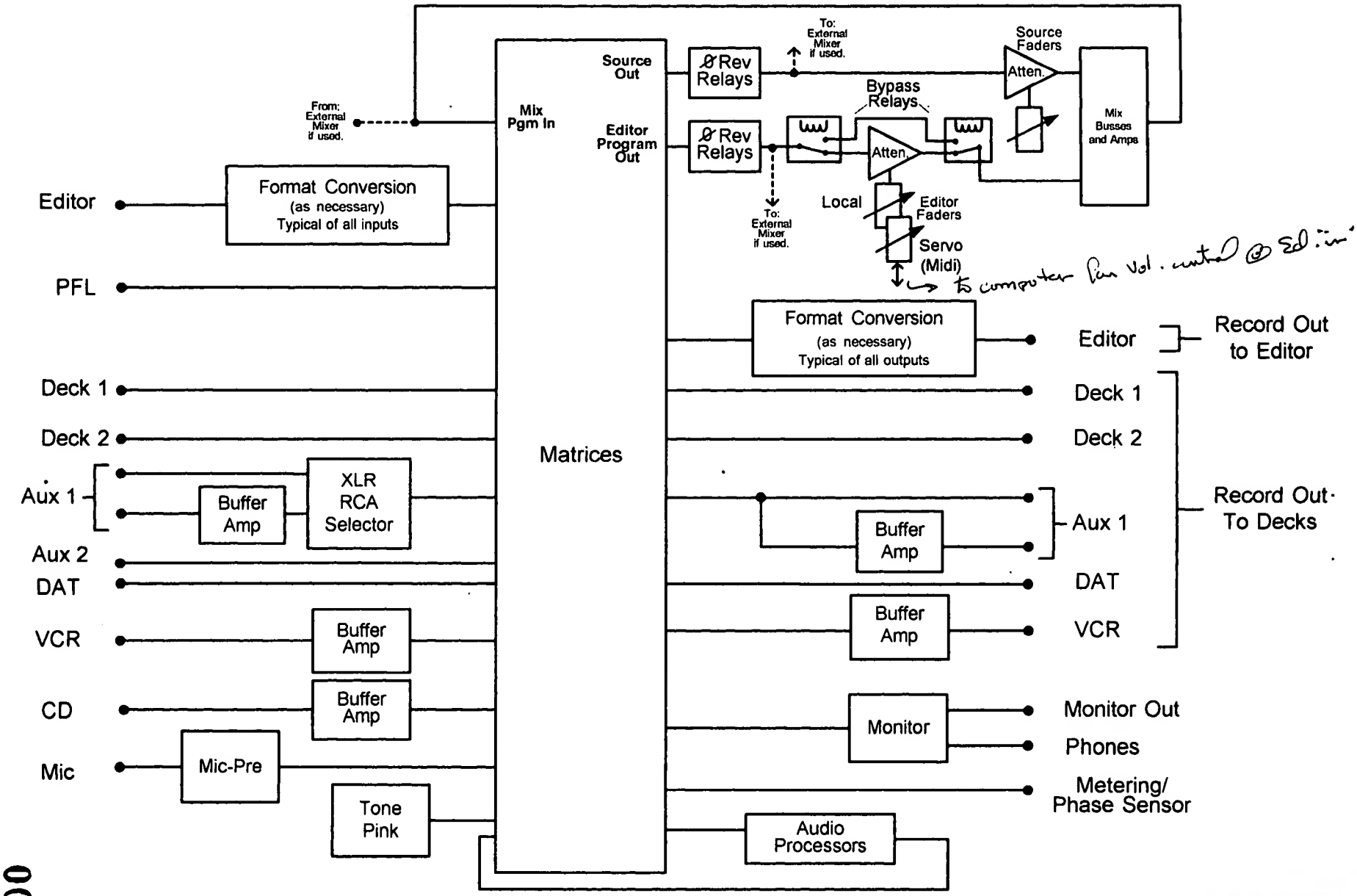

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The Audio*manager*				
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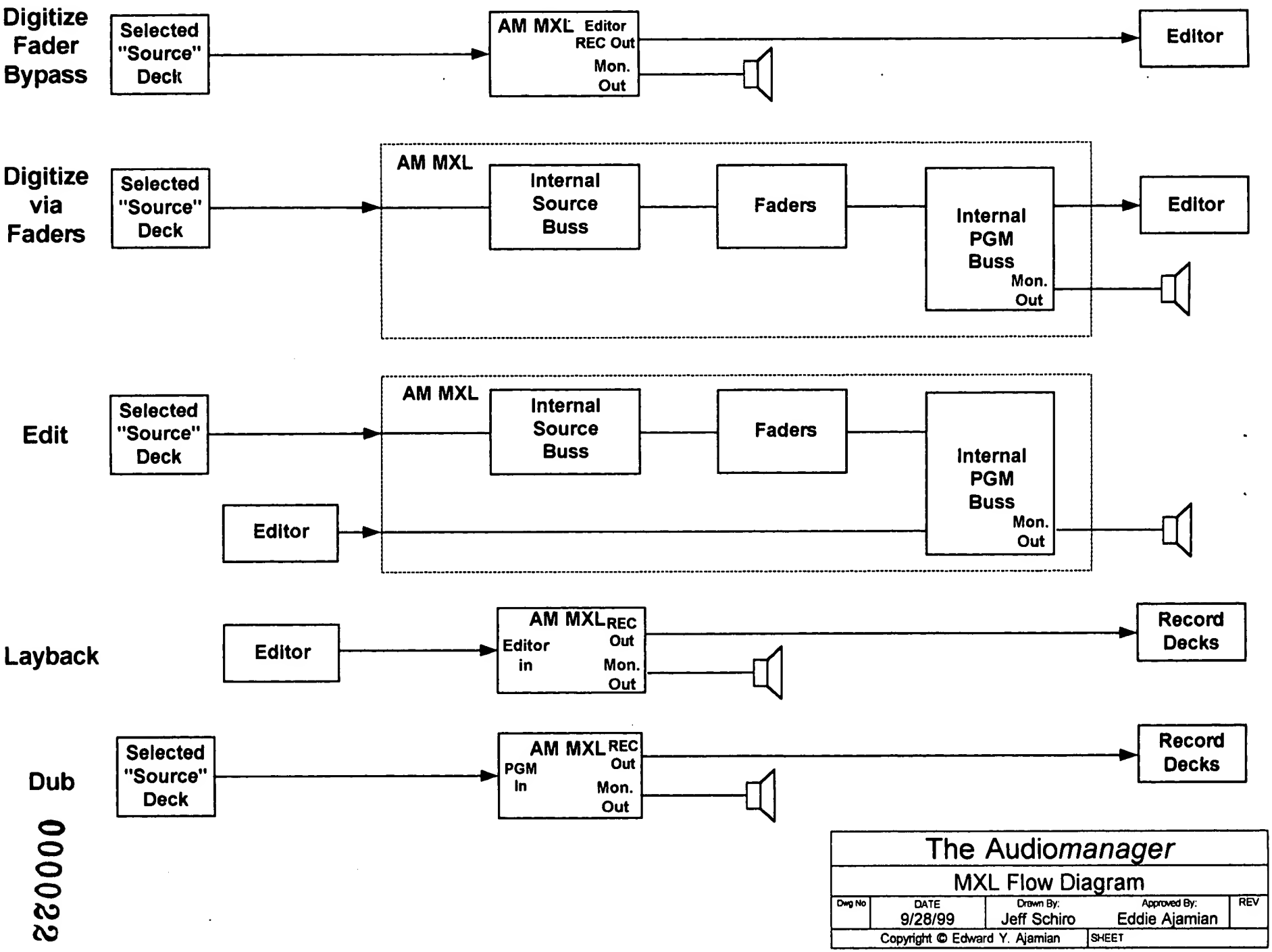
Digitize Fader Bypass
Selected "Source" Deck
AM MXL
Editor REC Out
Mon. Out
Editor
Digitize via Faders
Selected "Source" Deck
AM MXL
Internal Source Buss
Faders
Internal PGM Buss
Mon. Out
Editor
Edit
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Editor
AM MXL
Internal Source Buss
Faders
Internal PGM Buss
Mon. Out
Layback
Editor
AM MXL
Editor in
REC Out
Mon. Out
Record Decks
Dub
Selected "Source" Deck
AM MXL
PGM In
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Record Decks
The Audiomanager
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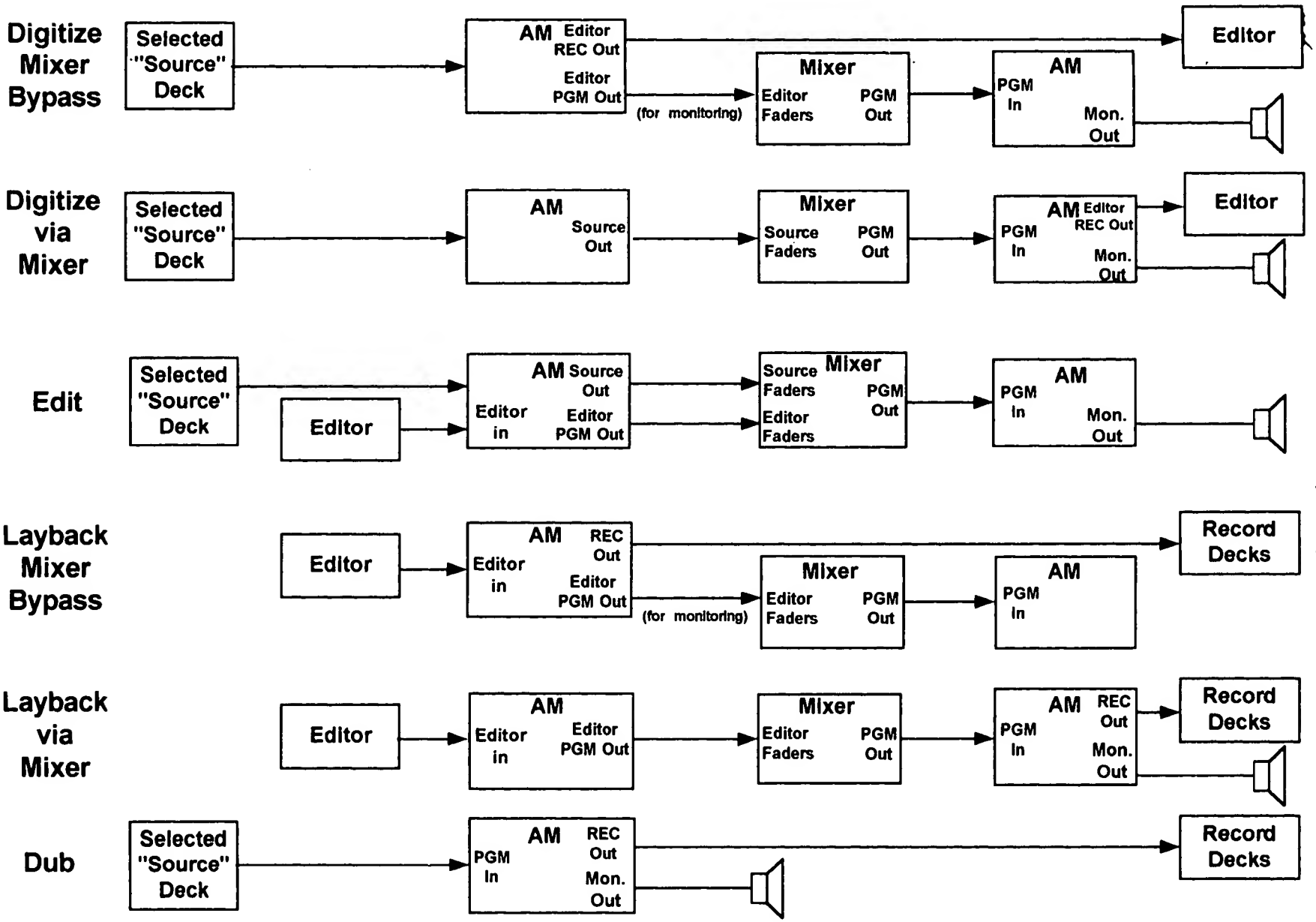

The Audio*manager*

Standard Flow Diagram

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	9/28/99	Jeff Schiro	Eddie Ajamian	

 SHEET

The Audio*manager* series

BASIC OPERATION (Standard Panel)

When the Audio*manager* is first switched on the lights on the control surface will flash, then it will default to the edit mode.

I. a. To DIGITIZE without the audio passing through the faders:

De-select LAYBACK, if engaged

Select DIGITIZE BYPASS FADERS

Select the appropriate SOURCE

MIXER monitor can be selected so that the Fader Panel can be used to create a monitor mix without effecting recording levels.

To select another SOURCE or de-select the current one you must first de-select the DIGITIZE mode which will de-select the SOURCE. Then re-select DIGITIZE and select a new SOURCE. (This is for your own good.)

The DUB mode can be selected while in the DIGITIZE mode.

b. To DIGITIZE using the Fader Panel for level control:

Select DIGITIZE VIA MIXER.

The selected SOURCE is fed to the SOURCE faders.

All else is as above.

II. To EDIT:

De-select DIGITIZE and LAYBACK, if engaged

The "Editor Pgm Outputs" feed EDITOR FADERS. This is for creating a monitor mix.

To 'Audition' a source while editing, select the SOURCE and it will feed the four 'SOURCE' faders.

The DUB mode can be selected while in the DIGITIZE mode.

BASIC OPERATION (Standard Panel) (Page 2)

III. a. To LAYBACK without going through the faders:

De-select LAYBACK VIA FADERS, DIGITIZE and DUB, if engaged.

Select LAYBACK BYPASS FADERS.

MIXER monitor can be selected so that the Fader Panel can be used to create a monitor mix without effecting recording levels.

b. To LAYBACK using the mixer for level control and mixing:

De-select LAYBACK BYPASS FADERS, DIGITIZE and DUB, if engaged.

Select LAYBACK VIA FADERS.

The "Editor Pgm Outputs" feed EDITOR faders.

IV. To DUB:

De-select LAYBACK, if engaged

Any SOURCE selected is fed directly to all of the other decks except for any that were previously assigned to DIGITIZE

To select another SOURCE or de-select the current one, de-select the DUB mode, than re-select it and select a new SOURCE. (This, also, is for your own good.)

The DIGITIZE or EDIT modes can be selected while in the DUB mode

V. All SOURCES can be selected as described above. The following sources have additional notes.

The Audio*manager* has two microphone inputs. Each has front panel switchable phantom power, 100hz high-pass filter, and pad for line level signals. A switch enables an auto-muting function as described below.

A 1khz tone oscillator can be selected in the DIGITIZE or DUB mode. The monitor is muted.

Video BLACK can be selected in the DIGITIZE or DUB mode. The Audio*manager* will signal an external video router to route black.

VI. Monitoring

Any device in the system can be monitored at any time by pressing its corresponding MONITOR selector. A red indicator confirms the status of all monitor source selections except MIXER which has a green indicator.

There are two selectors for monitoring either Ch. 1 & 2 or, Ch. 3 & 4. Amber indicators confirm the status.

There are four selectors for monitoring in stereo, mono, left only, or right only. Amber indicators confirm the status.

A volume control sets the level to the editing room loudspeakers. LED's surrounding the control indicate relative level.

Three more selectors are for Mute, Dim, and Normal level to the editing room loudspeaker. When initialized, the monitor will default to Normal. The Mute and Dim selectors flash when engaged.

When Muting is activated, the volume control and its level indicators are disengaged.

When Dim is activated, the shaft encoder is disengaged but the level indicator last illuminated remains lit.

When Normal is restored, the last volume setting is restored. A separate volume control sets the level of the headphone output.

When the mic pre amp or its monitor are selected, the headphone output is active and automatic muting of the monitor output is optional. A front panel switch disables the auto-muting function. A red indicator confirms its status. The mute indicator confirms the mute status. The Dim and Normal selectors can not override auto-muting.

De-selecting the current monitor selection restores the default monitor.

Budgeworks Version P3

Patent Commands

When the system is first switched on, Input 22 (Silence) is assigned to Outputs 1-32, the speaker mute relay and the headphone mute relay are energized, and all LED's on the control panel will flash, for three seconds. Then, the Monitor defaults to Ch. 1 & 2 (L47), Stereo (L53), and Normal (L56), -- (no relays energized), and the Mode defaults to Edit.

I. When either DIGITIZE mode (S24 or S25) is selected, both LAYBACK modes (S26 and S27) must be de-selected.

1. When DIGITIZE BYPASS FADERS (S25) is selected (DIGITIZE VIA FADERS (S24) must be de-selected), a green LED (L41) confirms the status.

The EDIT (S28) mode is de-selected and/or locked out.

The LAYBACK modes (S26 and S27) are locked out.

The DUB (S29) mode can be selected.

Previously selected Phase Reverse relays are deactivated and Phase Reverse switches S41-S44 are locked out.

Inputs 25-28 (Editor) default to Outputs 21-24 (Editor Faders) and 29-32 (Monitor). The green Editor Monitor LED (L28) confirms the status.

The Editor's video output is routed to the video monitor.

The meter defaults to Source, LED's L74 and L75 light.

If a SOURCE was not selected previously, all green SOURCE LED's will "chase."

Any selected SOURCE's audio, video and data, (S4-S13) (Inputs 1-20 + 23 & 24) is switched to Outputs 17-20 (Editor Record Input). A green "SOURCE" LED (L8, 10, 12,...26) confirms the selection.

To select another SOURCE or de-select the current one, de-select the DIGITIZE mode which will de-select the SOURCE. Then re-select DIGITIZE and select a new SOURCE.

Pressing the button of a selected source de-selects that source.

Selecting MIXER MONITOR also enables the Editor Faders. The "Editor Faders-Monitor" LED (L80) lights.

2. When DIGITIZE VIA FADERS (S24) is selected (DIGITIZE BYPASS FADERS (S25) must be de-selected), a green LED (L40) confirms the status. The Source Faders (K62) are enabled and the Source Fader-Record LED (L81) lights. All else is as above except:

   Inputs 29-32 (Mix PGM In) default to Output 17-20 (Editor Record).

   The Source Faders Phase Reverse relays are enabled.

   Any selected SOURCE (S4-S13) (1-18 + 23 & 24) is switched to Output 25-28 (Source). A corresponding green SOURCE LED confirms the selection.

   The meter defaults to Mixer, LED's L72 and L75 light.

II. When EDIT (S28) is selected (DIGITIZE (S24 and S25) and LAYBACK (S26 and S27) must be de-selected), a green LED (L44) confirms the status. The Editor Faders are enabled and the "Editor Faders-Monitor" LED (L80) lights.

   Inputs 29-32 (Mix PGM) defaults to Outputs 29-32 (Monitor). The yellow Mixer Monitor LED (L31) confirms the status.

   The Editor's video output is routed to the video monitor.

   Previously selected Phase Reverse relays (K51-K58) are deactivated and enabled.

   The meter defaults to Mixer, LED's L72 and L78 light.

   Inputs 25-28 (Editor) default to Outputs 21-24 (Edit Fader).

   "Audition":

   Any selected SOURCE (S4-S13) (1-20 + 23 & 24) is switched to Outputs 25-28 (Source). A corresponding green SOURCE LED confirms the selection by flashing.

   The Source Faders are enabled and the "Source Faders-Monitor" LED (L82) lights. The green Mixer Monitor LED (L30) lights.

   The Source Faders Phase Reverse relays are enabled.

   The meter defaults to Source, LED's L74 and L78 light.

   When a new SOURCE is selected, the previously selected SOURCE is de-selected, except any previously assigned to DUB.

   Depressing the button of a selected source de-selects it.

   Edit Rec:

   When any of the Edit/Rec. switches are depressed the Bypass Relays are engaged, the Editor Faders are interfaced with the editor's virtual mixer and their attenuators default to '0db'. The selected channel's fader will 'write' to the editor. Inputs 25-28 (Editor) default to Outputs 29-32 (Monitor). The editor's output is monitored.

III. When either LAYBACK (S26 and S27) mode is selected (DIGITIZE (S24 and S25) and DUB (S29) must be de-selected).

1. When LAYBACK BYPASS FADERS (S27) is selected (LAYBACK VIA FADERS (S26) must be de-selected), a yellow LED (L43) confirms the status.

   The EDIT (S28) mode is de-selected and/or locked out.

   The DIGITIZE (S24 and S25) and DUB (S29) modes are locked out.

   All SOURCES (S4–S13) are de-selected and locked out.

   Previously selected Phase Reverse relays are deactivated and Phase Reverse switches S41-S44 are locked out.

   The Editor, Inputs 25-28 default to Outputs 1-16 (Record Decks), 21-24 (Editor Fader), and 29-32 (Monitor). The yellow Editor Monitor LED (L29) confirms the status. The Editor's video and data output are routed to the Record Decks.

   The Editor's video output is routed to the video monitor.

   The meter defaults to Editor, LED's L71 and L75 light.

   The MONITOR SOURCE LED's (L29, L31-L34, and L36-L38) will flash at a slow rate until one of their corresponding switches is selected.

   Selecting MIXER MONITOR also enables the Editor Faders (K61). The "Editor Faders-Monitor" LED (L80) lights.

2. When LAYBACK VIA FADERS (S26) is selected (LAYBACK BYPASS FADERS (S27) must be de-selected), a yellow LED (L42) confirms the status. The Editor Faders are enabled, the "Editor Faders-Record" LED (L79) lights. All else is as above except:

   The Phase Reverse relays are deactivated and are enabled.

   Inputs 25-28 (Editor) default to Outputs 21-24 (Edit Faders). Inputs 29-32 (Mix PGM) default to Outputs 1-16 (Record Decks).

   Inputs 29-32 (Mix PGM) default to Outputs 29-32 (Monitor). The yellow Mixer Monitor LED (L31) confirms the status.

   The meter defaults to Mixer, LED's L72 and L75 light.

Patent Commands

IV. When DUB (S29) is selected (LAYBACK (S26 and S27) must be de-selected), a red LED (L46) confirms the status.

The EDIT (S28) mode is de-selected, but not locked out. The DIGITIZE or EDIT modes can be selected.

Both Layback Modes (S26 and S27) are locked out.

All SOURCES (S4-S13) are de-selected except any that were previously assigned to DIGITIZE.

All red SOURCE LED's will "chase" until a SOURCE is selected.

The audio, video, and data of any selected SOURCE (S3-S14) (1-20 + 23 & 24) is switched to Outputs 1-16 (Record Decks) minus outputs to devices previously assigned to Digitize or to that SOURCE. A red "SOURCE" LED confirms the status.

Then, MONITOR SOURCE LED's (L32-L34 and L36-L38) will flash at a slow rate until one of their corresponding switches is selected.

The meter defaults to Monitor, LED's L73 and L78 light.

The selected MONITOR SOURCE (S14-S23) (1-20 + 23 & 24) defaults to Outputs 29-32 (Monitor). A red MONITOR SOURCE LED confirms the status.

To select another SOURCE or de-select the current one, de-select the DUB mode which will de-select the SOURCE. Then re-select DUB and select a new SOURCE.

Pressing the button of a selected source de-selects that source.

V. Monitor Source Routing

Monitor routing defaults, which can be manually overridden, are based on Mode selection as described above.

Any device in the system can be monitored at any time by pressing its corresponding MONITOR SOURCE (S14-S23) selector. The corresponding LED's will flash to indicate non-default selections.

A red LED (L32-L39) confirms the status of all monitor source selections except 'EDITOR' and 'FADERS' which have a green (L28, L30) and a yellow LED (L29, L31). When manually selected, both will flash otherwise, the mode determines which of the pair lights.

When any MONITOR SOURCE (S14-S23) is selected, the previously selected MONITOR SOURCE is de-selected.

De-selecting the current monitor selection restores the default.

De-selecting the default monitor mutes the Monitor Output with no indication given.

When any selection is made, Outputs 28-32 (Monitor) are momentarily muted.

Patent Commands

VI. Monitor System Control

Upon power-up, K6, K7 and L54 are energized for three seconds.

Once initialized the monitor defaults to Ch. 1 & 2 (L47), Stereo (L53), and Normal (L56) -- (no relays energized).

There are two interlocking selectors for channel pair monitoring:

Ch. 1 & 2 (S30 > L47) or,
Ch. 3 & 4 (S31 > L48)

There are four interlocking selectors for monitoring:

Stereo (S36 > L53),
Left only (S34 > L51),
Right only (S35 > L52), and
Mono (S33 > L50)

When Mono (S33) is selected, the Mono Trim (S32 > L49) can be activated.

When Mono (S33) is de-selected Mono Trim (S32/L49/K10) is disengaged.

There are three interlocking selectors for Speaker and Headphone Level:

Mute (S37 > L54),
Dim (S38 > L55, K2), and
Normal (S39 > L56)

The Mute and Dim selectors flash when engaged.

Mute and Dim can be de-selected by selecting Normal.

When the 1Khz Tone (S5) is selected, the Dim LED (L55) is on steady and the loudspeaker headphone mute relays are energized. The Normal and Dim selector can not over-ride this condition.

When either the microphone (S13) or the mic. monitor (S23) is selected the loudspeaker mute relay is energized.

When Preset (S40 > L57, L58, K6) is depressed, the preset monitor levels will engage. Adjusting the volume control deactivates these settings, as will depressing S40.

VII. Metering

The meter input defaults are based on the Mode selection and PFL selection as described above. Additionally, the defaults can be overridden by the meter breakaway switches:

Editor	S45
Mixer	S46
Source	S47
Monitor	S48

LED's L71-L74 indicate the selected meter source and flash for override selections. LED's L75-L78 indicate the type of signal being metered and are dictated by the selected mode as described above. They remain unlit for override selections.

VIII. Phase Reverse

The Audiomanager is equipped with phase meters across Channels 1 & 2, and 3 & 4. Input channels of the fader panel can be phase reversed by depressing S41-S44. LED's L59-L62 indicate the status. A master Phase Reverse LED (L84) is also lit.

In the Digitize via Faders mode, the Source Faders phase reverse relays will be enabled as will the corresponding channel "Rev" LED (L63-L66) on the fader panel.

In the Layback via Faders mode, the Editor Faders phase reverse relays will be enabled as will the corresponding channel "Rev" LED's on the fader panel.

In the Edit mode, the Editor Faders phase reverse relays will be enabled as will the corresponding channel "Rev" LED on the fader panel. In the Edit mode with a SOURCE selected ("Audition"), the Source Faders phase reverse relays will be enabled as will the corresponding channel "Rev" LED's on the fader panel.

XIV. Additional Workstation Interface

It is possible for both the Audio*manager* and the editor to respond to the digitize command when initiated by the other.

When any source is selected, the appropriate workstation defaults (program format, input designation, etc.) could engaged.

When integrating a digital deck with an analog Audio*manager*, the decks AES/EBU I/O can be directly connected to the editor's audio interface and routed via the workstation defaults.

When the editors tone oscillator is on, the Audio*manager* monitor output could be muted.

Audio*manager*

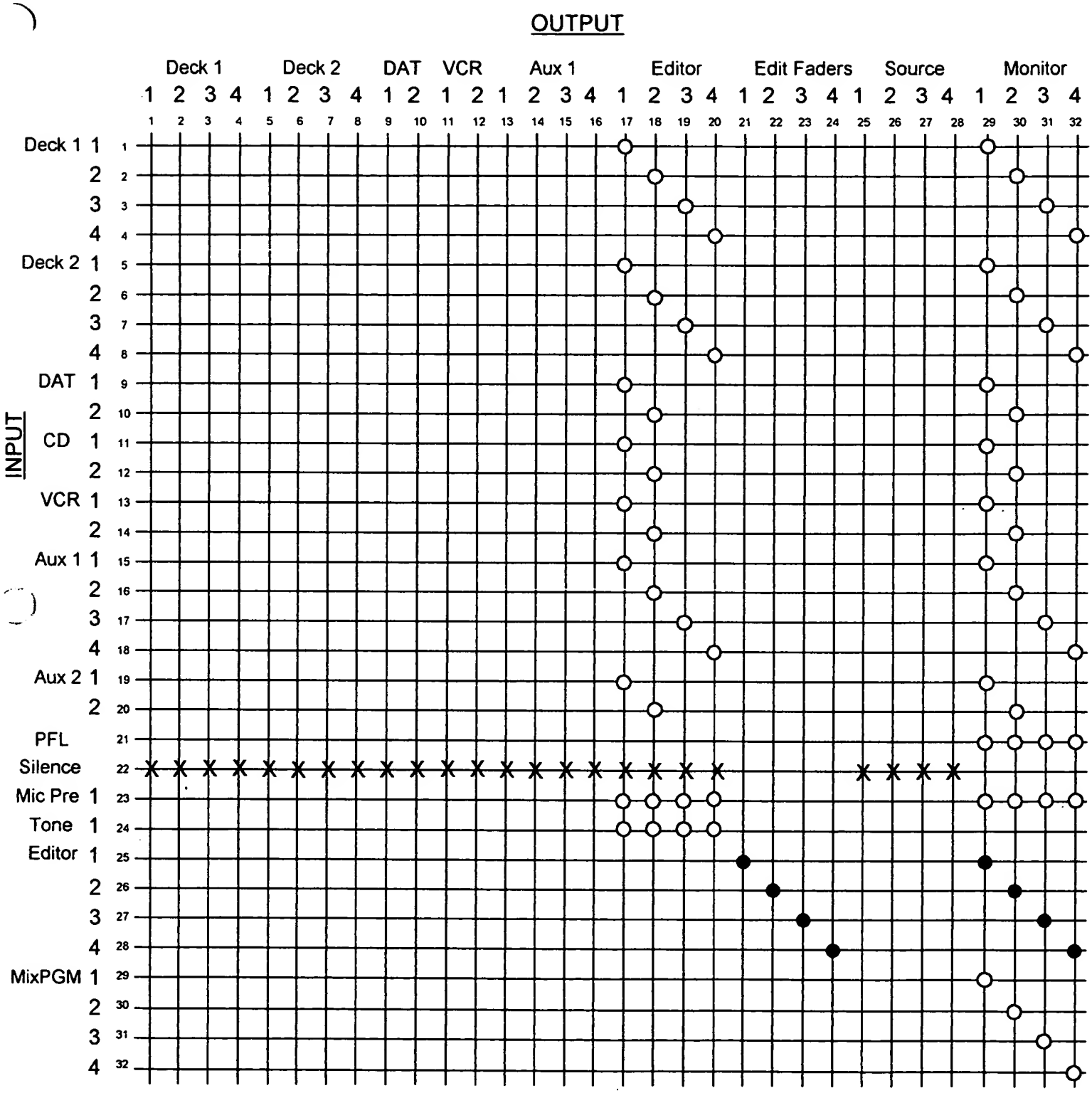
Patent Mode Plan

	Monitor Source Default	EDIT LED's 1 L44	EDIT LED's 2 L45	Monitor Select LED's Editor 1 L28	Editor 2 L29	Mixer 1 L30	Mixer 2 L31	Meter	Meter Indicators Editor L71	Src L74	Mix L72	Mon L73	Rec L75	Mon L78	Editor Fader Ind. Record L79	Monitor L80	Source Fader Ind. Record L81	Monitor L82	Editor Fader Ctl.
DBF	Editor	X	X	Grn	X	X	X	Source	X	ON	X	X	ON	X	X	ON	X	X	VCA
DVF	Editor	X	X	Grn	X	X	X	Mixer	X	X	ON	X	ON	X	X	X	ON	X	VCA
EDIT	Mixer	*Yel*	X	X	X	X	X	Yel	Mixer	X	X	ON	X	X	ON	X	X	X	ON	See below
AUD	Mixer	*Yel*	Grn	X	X	Grn	Yel	Source	X	ON	X	X	X	ON	X	ON	X	ON	See below
LBF	None	X	X	X	*Yel*	X	*Yel*	Editor	ON	X	X	X	ON	X	X	ON	X	X	VCA
LVF	None	X	X	X	*Yel*	X	*Yel*	Mixer	X	X	ON	X	ON	X	On	X	X	X	VCA
DUB	None	X	X	X	X	X	X	Monitor	X	X	X	ON	X	ON	X	X	X	X	None

Editor Fader Control

EDIT	Editor	Yel	X	X	Yel	X	X	Editor	ON	X	ON	X	X	ON	X	ON	X	X	VCA
REC	Editor	Yel	X	X	Yel	X	X	Editor	ON	X	X	X	ON	X	On	X	X	X	Midi
AUD	Mixer	Yel	Grn	X	X	Grn	Yel	Source	X	X	ON	X	X	ON	X	ON	X	ON	VCA

ital = Flashing

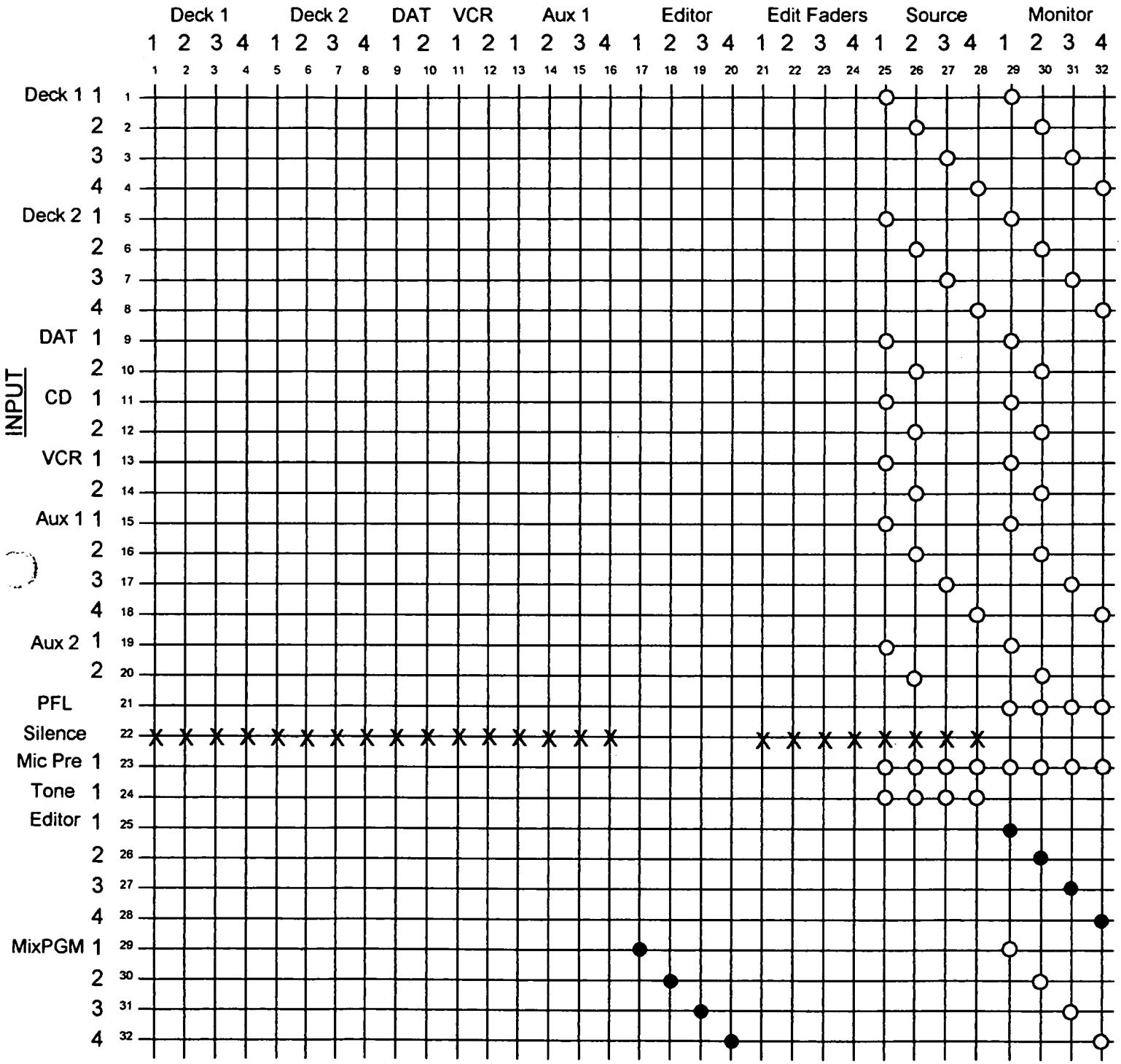


000034

● = Default Crosspoint
O = Selectable Crosspoint
X = Silence Select

The Audiomanager				
P104 Crosspoints DIGITIZE BYPASS FADERS				
Dwg No	DATE 9/28/99	Drawn By: Jeff Schiro	Approved By: Eddie Ajamian	REV A
		SHEET		

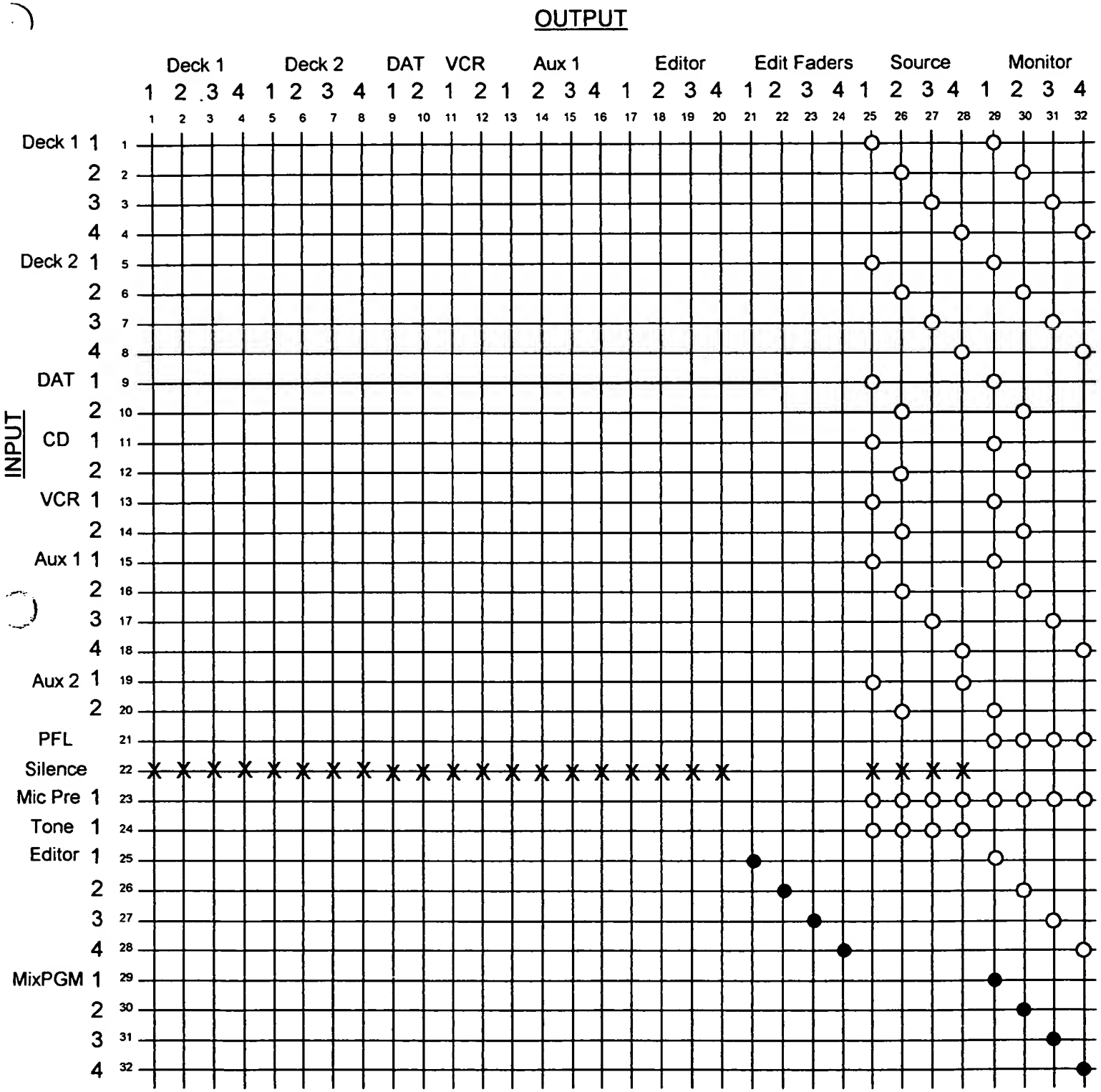
OUTPUT



000035

● = Default Crosspoint
O = Selectable Crosspoint
X = Silence Select

The Audio*manager*				
P104 Crosspoints DIGITIZE VIA FADERS				
Dwg No	DATE 9/28/99	Drawn By: Jeff Schiro	Approved By: Eddie Ajamian	REV A
		SHEET		



Confidential

● = Default Crosspoint

O = Selectable Crosspoint

X = Silence Select

000036

The Audio*manager*			
P104 Crosspoints EDIT/AUDITION			
Dwg No	DATE 9/28/99	Drawn By: Jeff Schiro	Approved By: Eddie Ajamian / REV A
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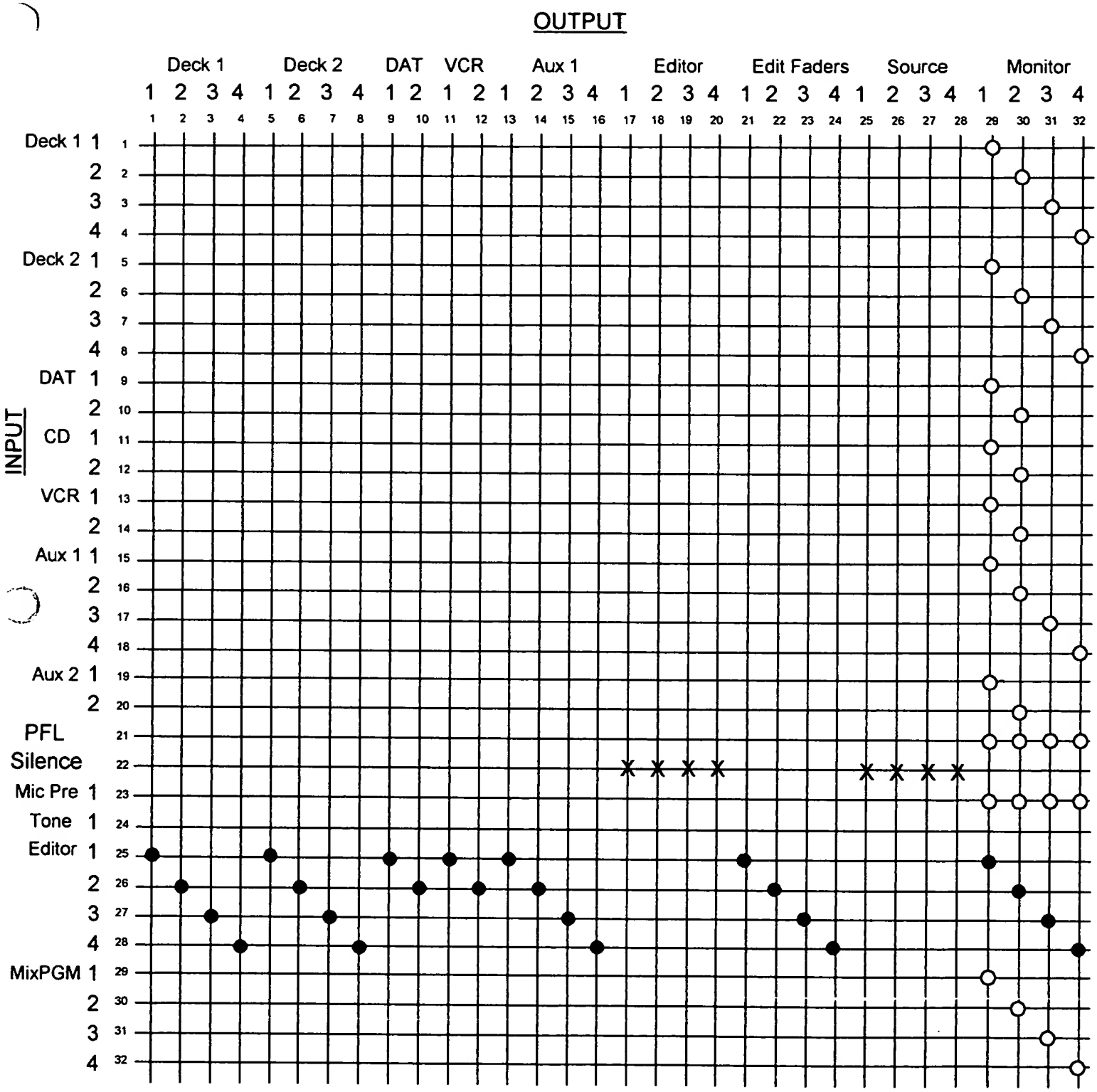

Confidential

● = Default Crosspoint
○ = Selectable Crosspoint
X = Silence Select

000037

The Audio*manager*				
P104 Crosspoints LAYBACK BYPASS FADERS				
Dwg No	DATE 9/28/99	Drawn By: Jeff Schiro	Approved By: Eddie Ajamian	REV A
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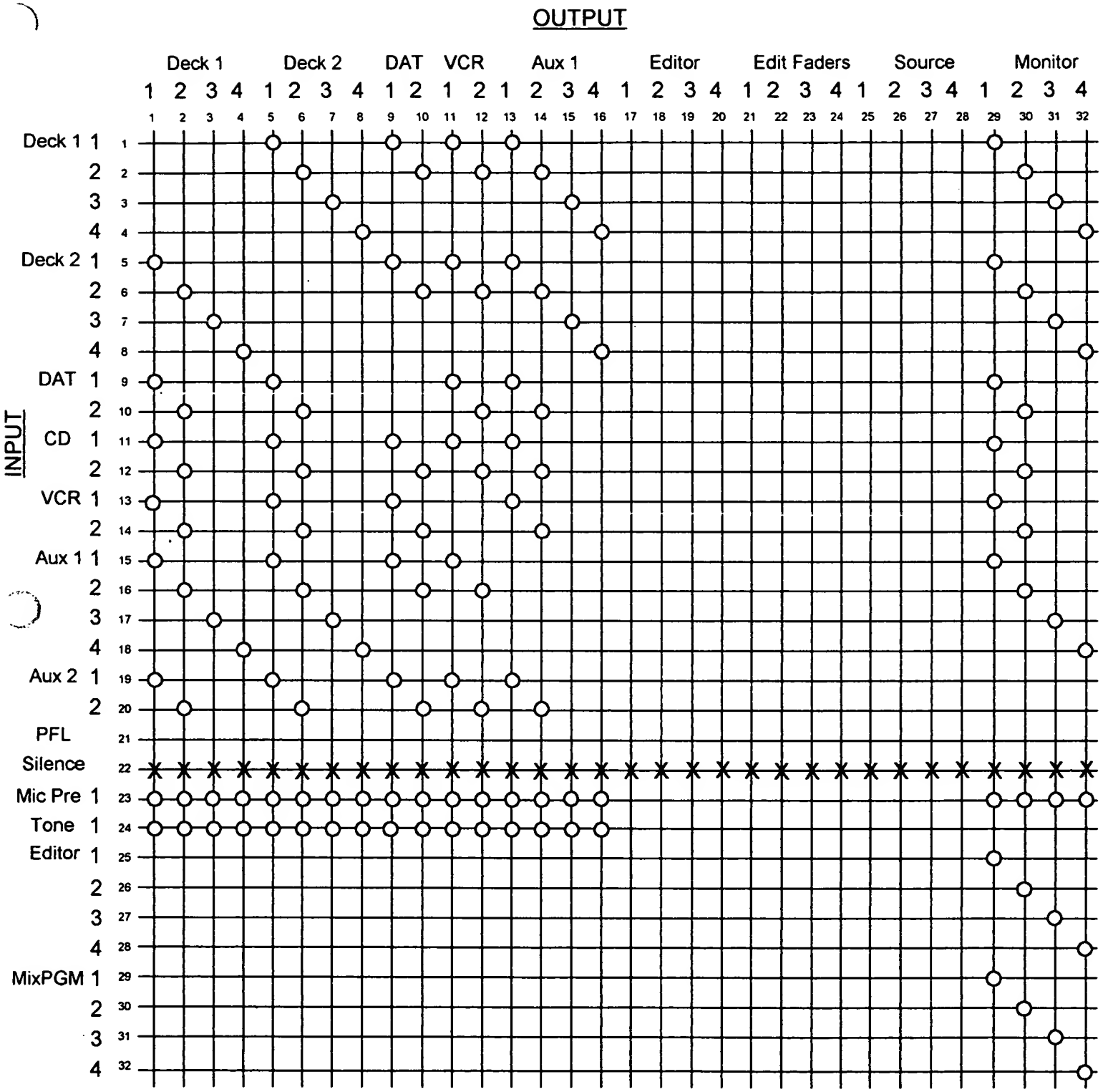

Confidential

● = Default Crosspoint
○ = Selectable Crosspoint
X = Silence Select

000038

The Audio*manager*				
P104 Crosspoints DUB				
Dwg No	DATE 9/28/99	Drawn By: Jeff Schiro	Approved By: Eddie Ajamian	REV A
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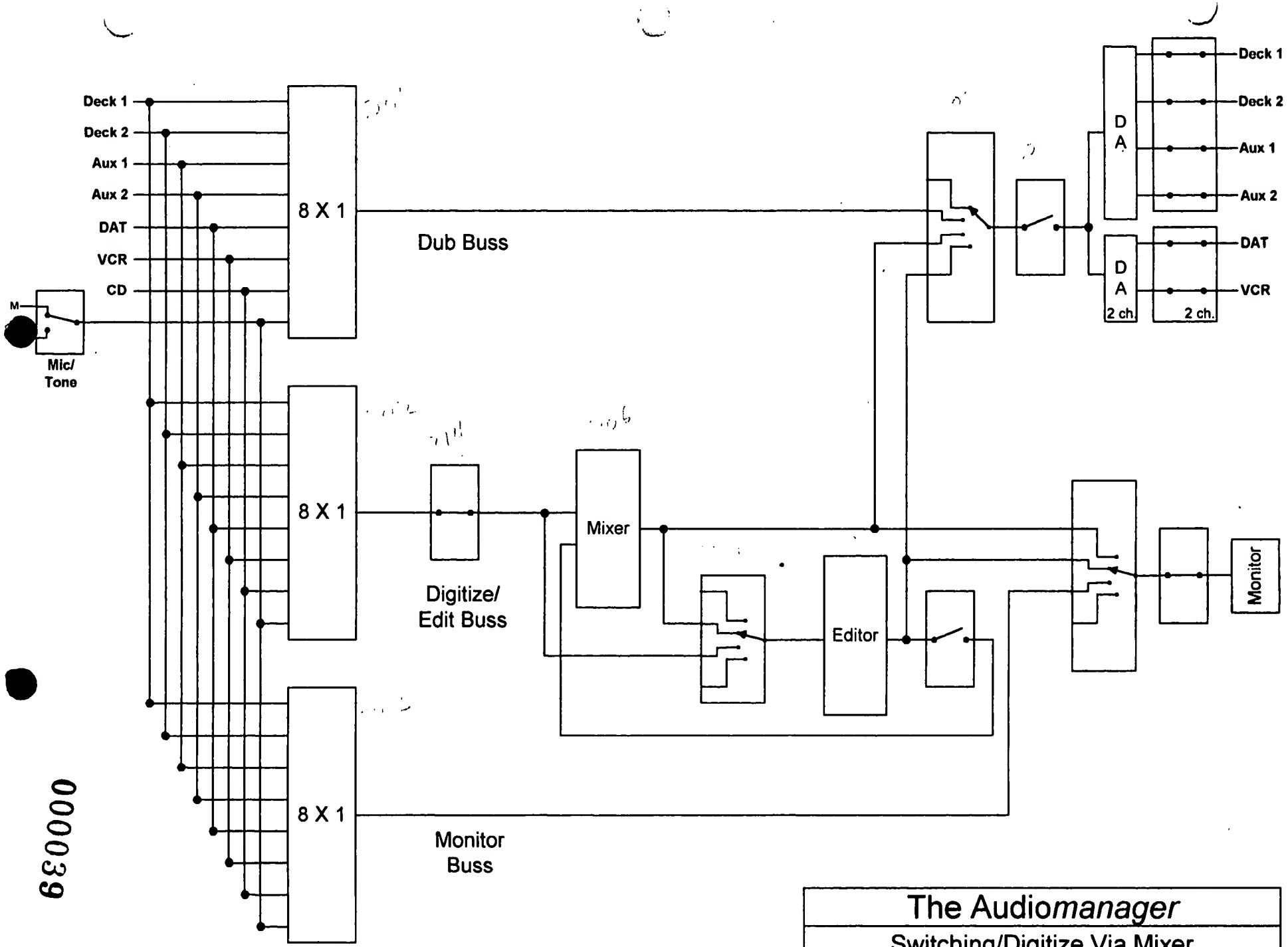


000039

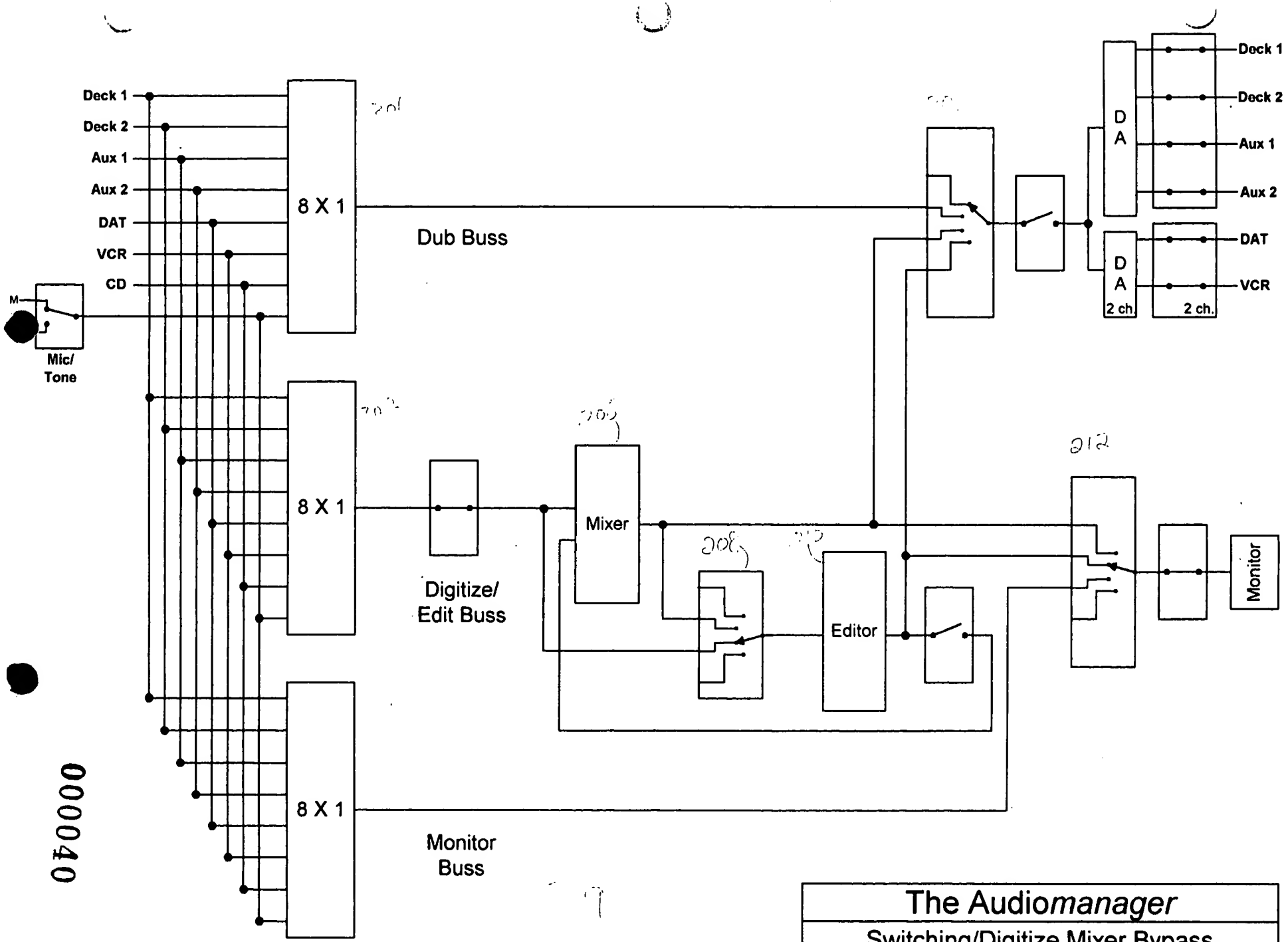
Note: All Switches are 4 channel except where noted.

The Audio*manager*

Switching/Digitize Via Mixer

Dwg No	DATE	Drawn By:	Approved By:	REV
	9/10/98	Jeff Schiro	Eddie Ajamian	

 SHEET



000040

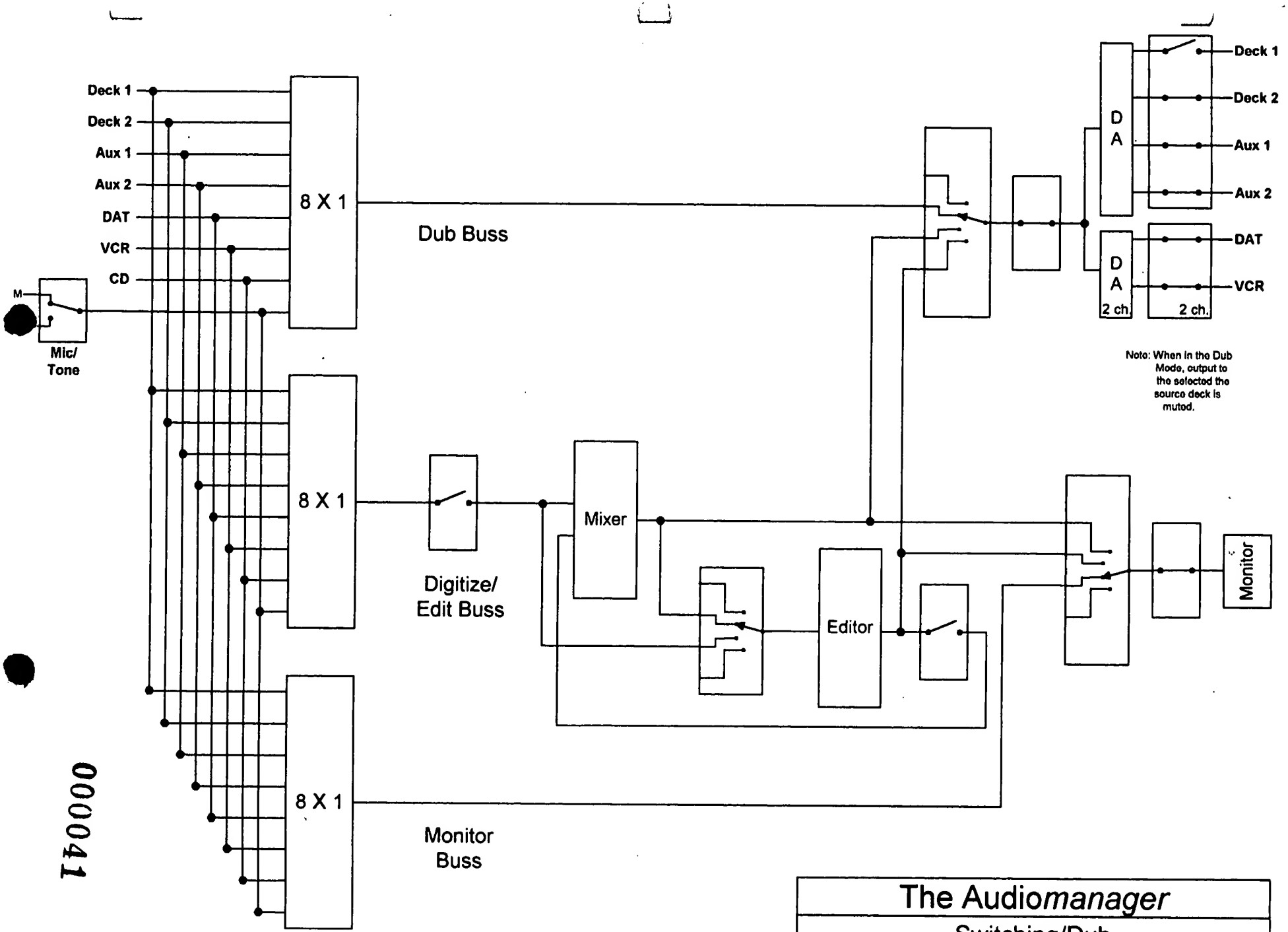
Note: All Switches are 4 channel except where noted.

The Audio*manager*

Switching/Digitize Mixer Bypass

Dwg No	DATE	Drawn By:	Approved By:	REV
	9/10/98	Jeff Schiro	Eddie Ajamian	

 SHEET



000041

Note: All Switches are 4 channel except where noted.

The Audio*manager*

Switching/Dub

Dwg No	DATE	Drawn By:	Approved By:	REV
	9/10/98	Jeff Schiro	Eddie Ajamian	

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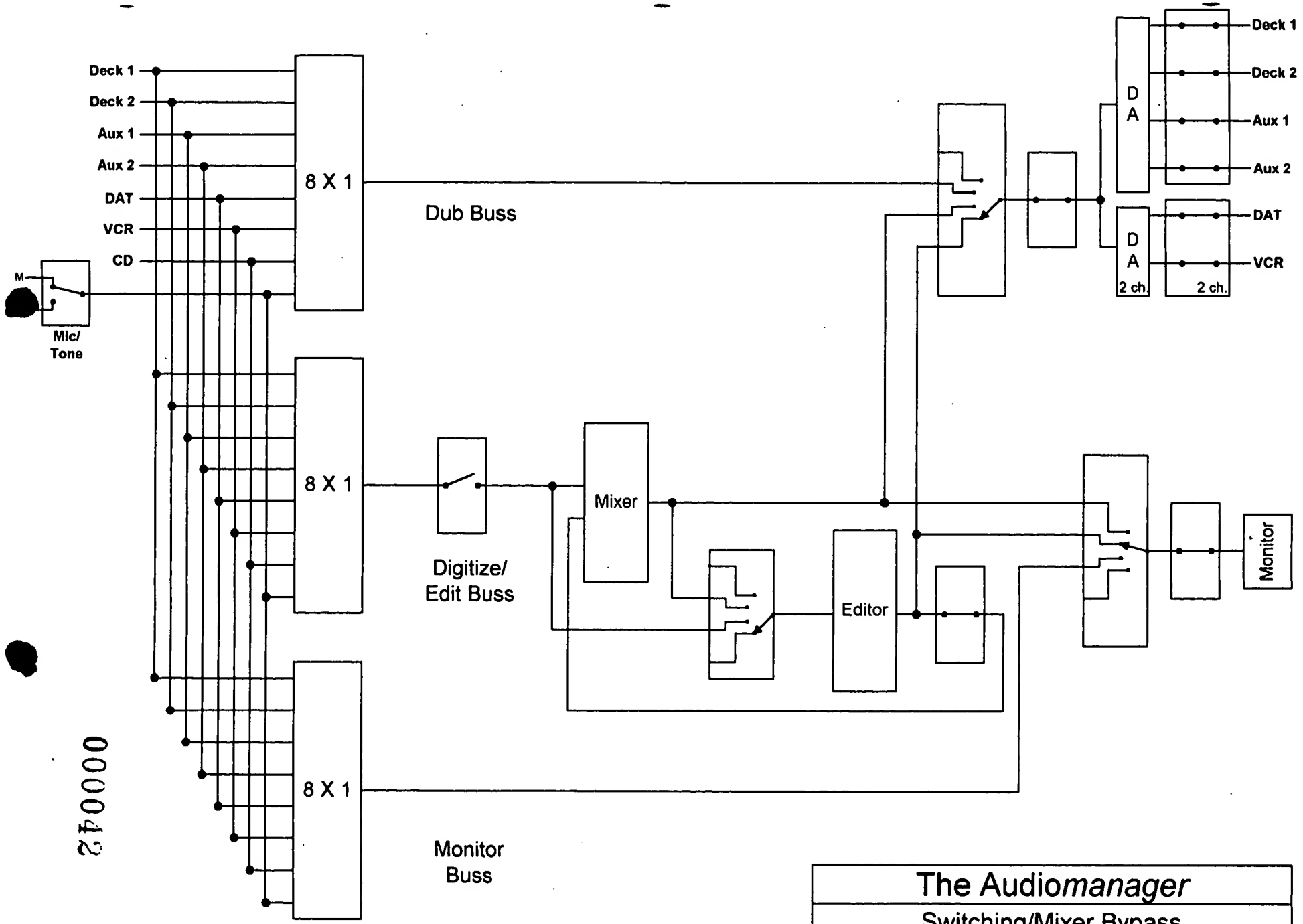

000042

Note: All Switches are 4 channel except where noted.

The Audio*manager*

Switching/Mixer Bypass

Dwg No	DATE	Drawn By:	Approved By:	REV
	9/10/98	Jeff Schiro	Eddie Ajamian	

 SHEET